Chris Watkins

THE LONDON CENTRE
for Leadership in Learning

Four dimensions of Effective Learning

Into the four pages which follow I have squeezed some ideas, frameworks, evidence and dynamics about four dimensions of effective learning in classrooms. The first three of these dimensions can be found in research reviews of fifty years ago, and regularly arise in teachers' experiences of the best classroom learning, but the fourth is only more recently understood.

They are fully developed in chapters 6 to 9 of:
Watkins C, Carnell E, and Lodge C (2007) Effective Learning in Classrooms
    London: Sage   http://chriswatkins.net/download/82/

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More detail of the background research may be found in these publications of the National School Improvement Network:
Watkins C, Carnell E, Lodge C, Wagner P & Whalley C (2002) Effective Learning
    Research Matters Series No. 17   http://chriswatkins.net/download/81/
with associated aspects in:
Watkins C (2001) Learning about Learning enhances Performance
    Research Matters Series No. 13   http://chriswatkins.net/download/106/
Watkins C (2004) Classrooms as Learning Communities
    Research Matters Series No. 24   http://chriswatkins.net/download/110/
Watkins C (2006) Personalised Classroom Learning
    Research Matters Series No. 29.   http://chriswatkins.net/download/114/

Other connected considerations may be found in:
Watkins C (2005) Classrooms as Learning Communities: what's in it for schools?
    (London: Routledge)   http://chriswatkins.net/download/112/
Watkins C (2003) Learning: a sense-maker's guide
    (London, Association of Teachers and Lecturers) http://chriswatkins.net/download/84/
Carnell E and Lodge C (2002), Supporting Effective Learning
    (London, Paul Chapman/Sage)
Watkins C, Carnell E, Lodge C, Wagner P and Whalley C (2000) Learning about Learning (London,
    Routledge)   http://chriswatkins.net/download/107/

Active Learning

Collaborative Learning

Learner-driven Learning

Learning about Learning

Active Learning

what do we mean?

not:
• pupils running around the classroom;
• chaos, confusion etc.

Active learning indicates some sort of contrast with learners being passive, but it's not a simple polarisation. All learning is active in a certain sense, but some kinds of learning are more active than others.

Active engagement with materials, with ideas, with relationships and with other resources is a key purpose.

what's activity to do with learning?

"Active learning refers to the idea that people learn by engaging in a process of sense-making. …. The goal is not to provoke behavioral activity per se, but rather to provoke productive kinds of cognitive activity"
Mayer RE (1998), "Cognitive theory for education: what teachers need to know" in Lambert NM and McCombs BL (Ed.), *How Students Learn: reforming schools through learner-centred education*. Washington DC, American Psychological Association

"Active learning on the one hand has to do with learners making decisions about learning and on the other hand making active use of thinking."
Simons PR-J (1997), "Definitions and theories of active learning" in Stern D and Huber GL (Ed.), *Active Learning for Students and Teachers: reports from eight countries*. Frankfurt, OECD/Peter Lang

how do we go about it in a classroom?

If learning is "… the process whereby knowledge is created through the transformation of experience" (Kolb, 1984) then "It is not sufficient simply to have an experience in order to learn. Without reflecting upon this experience it may quickly be forgotten or its learning potential lost" (Gibbs, 1988).

The model below brings together some key steps in the process.
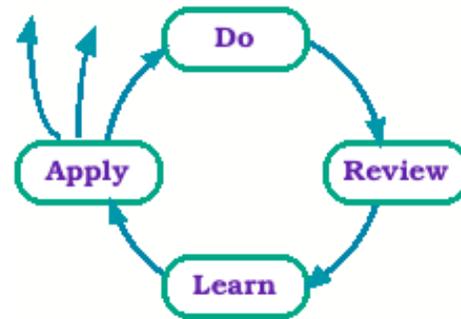
This cycle highlights activity in learning (Do), the need for reflection and evaluation (Review), the extraction of meaning from the review (Learn), and the planned use of learning in future action (Apply).

The cycle may be active over a long period of time (e.g. a design-and-make project) or a short time (a few minutes).

Examples

Active Reading

Learners go much further than the dominant (but passive) idea that reading is "getting this text in my head" through strategies such as:

Scanning before reading (what's the theme, how is the text structured?)

Questioning (what do I already know, what do I want to know more about?)

Read (small step at a time, stopping at regular intervals to make sense)

Review (What is being said? What do I think of it?)

Recollect (What are the main messages? What are the key ideas?)

Active Writing

Writing is not a "knowledge-telling process" - a sort of dumping onto paper which novice writers are encouraged into. Skilled writers approach the act of writing as something which in itself enhances their knowledge and understanding. Active writing is about writers becoming more planful and reflective. Active writers develop an idea of what they want to say in text, compose a draft, try it out with a reader and see whether it communicates what they themselves were intending.

Examples arise in all subjects:

	Do	Review	Learn	Apply
Maths	Tackle a problem	Review strategies	Compare effectiveness	Prepare for next challenge
English	Create a draft	Try out with a reader	Consider feedback	Redraft and publish
Technology	Construct a product	Test its function	Examine evaluations	Redesign
Drama	Rehearse	Critique	Adapt	Perform
History	Collect sources	Identify points of view	Synthesise	Use in another context

what holds us back?

• teachers planning for THEIR activity, not the activity of the learners

• running classrooms as "Do, do, and do some more"

• the voice of fear "it will all fall apart"

• underestimating pupils "they won't be able to handle it"

• our response to pressures to "cover the curriculum"

• the dominant view of learning: "learning = being taught"

"Why is it that, in spite of the fact that teaching by pouring in, learning by passive absorption, are universally condemned, that they are still so entrenched in practice?" (John Dewey, 1916)

• forgetting (or not knowing) that research surveys show that active learning gets better results
Abbott ML and Fouts JT (2003), *Constructivist Teaching and Student Achievement: The Results of a School-level Classroom Observation Study*, Washington: Seattle Pacific University
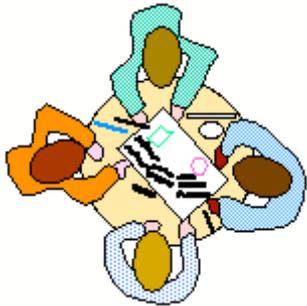
Collaborative Learning

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what do we mean?

Collaboration is about creating something greater between us than would have been achieved separately.

Cooperating is a lesser idea, about actions being adjusted so that each person achieves their individual goals [in a classroom: "Pass the ruler please"], whereas collaboration is about actions being adjusted in order to achieve a shared goal ["let's build it like this"].

what's collaboration to do with learning?

"You learn more [when working with others] because if you explain to people what to do, you say things that you wouldn't say to yourself, really. So you learn things that you wouldn't know if you were just doing it by yourself" [Annie, 10 years, interview with Caroline Lodge]

One of the key elements in collaborative learning is the promotion of dialogue. Dialogue in which learners explain to each other enhances understanding.

As learners become more adept in talking themselves through problems and contexts, their "outer speech" develops, and so does their "inner speech", giving greater power of self-direction.

how do we go about it in a classroom?

It's not just a matter of putting pupils in groups! Three major dimensions need attention:

1. The Design of the Task

- it must not be "decomposable", (i.e. one person could do it alone)
- it must be high level (i.e. not a "right answer" task)
- it must foster interdependence (so that each participant can bring something similar and something different)

2. The Type of Interaction

Learners may need prompts and support to develop their capacities:
- to focus on the thinking ("what do you think of my idea?")
- to focus on helping each other ("I'm confused about …")
- to handle the emotional aspects ("I feel … when you … ")

Such capacities are effectively developed through reviewing what works best, rather than moralising.

Interaction can be built in pairs, for example through "reciprocal teaching" where pairs read a text and discuss their reading in relation to given prompts:
- question
- clarify
- summarise
- predict

3. The Structure of Participants

Collaboration is often built on a structure which starts in pairs, develops to small groups and then engages the whole class.

Groups are most often comprised on a mixed basis: they then can reduce status differences and use diversity productively (more than is usually predicted).

Jigsaw Classroom

The core idea is to divide an area of enquiry into different sections, each one of which is allocated to a sub-group of the class. These sub-groups become expert in their section, and then the groups are recomposed with contributor(s) from each section in the (now) "jigsaw" group. At this point the big picture is created.

Examples:

- five "causes" of World War II

- the properties of six rocks

- different characters in Fairy Tales

- reading parts of a story together

In collaborative classrooms, small groups are often engaged in producing a product which supports the learning of other groups, and the whole class may publish a product which communicates the fruits of its learning beyond the boundaries.

what holds us back?

- "I couldn't delegate to THEM!" (the voice of derision)
- "they don't have the skills of collaboration" (the voice of deficit)
- others will think it's too noisy (the voice of fear)
- the caretaker wouldn't like me moving the tables (the voice of compliance)
- "high flyers" might be held back (a belief in maintaining difference rather than embracing diversity)
- there's no collaboration amongst the staff in this school!
- forgetting (or not knowing) that research demonstrates that collaborative classrooms are associated with:

- Improved learning and achievement

- Improved social and communication skills

- Improved engagement and responsibility

- Improved relationships

Learner-driven Learning

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what do we mean?

It's a matter of balance: shifting from classrooms which are full of "uninvited teaching", to classrooms where pupils are more crew than passengers.

We sometimes say that it is important to develop independent learners: we mean more independent from teachers. At the same time more interdependence between learners can develop.

So we want pupils to exercise greater *agency* - acting intentionally, making choices, making a difference and monitoring effects. In the process greater creativity also emerges.

what's learner direction to do with learning?

Self-direction and self-regulation is at the heart of being an effective learner. Teachers can teach as many skills and strategies as they like, but unless learners are involved in planning, monitoring and reviewing their learning it will not be fully effective.
Watkins C et al (2002) *Effective Learning*, National School Improvement Network

"When I'm stuck, I go back and check instead of guessing", says Vikesh (11 years) - a hallmark statement of the self-regulated learner.

"Choice and the opportunity for self-direction appear to enhance intrinsic motivation, as they afford a greater sense of autonomy"
Deci EL and Ryan RM (Ed.) (2002), *Handbook of Self-determination Research* Rochester, NY, University of Rochester Press

how do we go about it in a classroom?

"Students in all classrooms have always had the power to make the most basic choice about their learning: they may choose to engage in learning or to disengage. We cannot remove that choice"
Starnes, B.A. and Paris, C. (2000) 'Choosing to learn', *Phi Delta Kappan* January: 392-397.

Students of all ages and levels are most engaged when they:
- help define the content
- have time to find a particular direction that interests them.
- create original and public products
- sense that the results of their work are not predetermined or fully predictable.
Perrone V (1994), "How to engage students in learning", *Educational Leadership*, 51(5): 11-13.

Pupils might make classroom choices on:
- what they learn
- how they learn
- how well they learn, and
- why they learn.
Each time a choice is made, engagement is likely to increase, and learners set themselves a level of challenge which works for them. Examples (starting small-scale):

Choices in what to learn.
- which of this set of problems will you begin with?
- where in this text will you start reading
- which story for the class to have read at the end of the day.

Choices in how to learn.
- which reading place to choose
- whether to present some recent writing
- whose questions to take on it
- whether to work alone, in small groups, or as a class.

Choices in how well to learn.

Choosing how best to demonstrate understanding, and devising questions to check understanding leads to depth and challenge. It also gives students more control, makes evaluation feel less punitive, and provides an important learning experience in itself.

Learner-directed assessment
Even young children (Year 2) are able to participate in developing rubrics for their learning and also in applying criteria to the assessment of that learning. The quality of these rises over time (Higgins et al, 1994) .

Pupil self-assessments agree well with teachers' assessments, although children can tend to under-assess. Students report that self-assessment and peer assessment makes them think more, and learn more (Stefani, 1994).

In later years of school, learners are able to plan and organise extended periods of learning, including that which is a preparation for mandated tests (Starnes & Paris, 2000).

Choices in why to learn.

Pupils are already making these choices. Some are resolving to "Do it to please their parents" while others will be operating a version of "Do it to avoid detention". Bringing these into the open and discussing many will bring other purposes into the discourse and help learners try out new purposes of their own.

what holds us back?

- the deep under-estimation of young people in our society?
- the fact that most of the practices of schooling are based on the idea that adults know best?
- talking about pupils in terms of their deficits ("they haven't got the skills") rather than in terms of their experience (we haven't helped them master this yet")
- it may feel difficult for teachers to promote autonomy in pupils if teachers experience little autonomy themselves
- voices against choice:

  "kids can't have absolute freedom" (Where did that extreme suggestion come from?)

  "they're not mature enough yet" (How long will we wait?)

- forgetting (or not knowing) that research demonstrates that learners who plan and reflect most get 30% better scores in public examinations

  Atkinson S (1999), "Key factors influencing pupil motivation in design and technology", *Journal of Technology Education*, 10(2): 4-26

Learning about Learning

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what do we mean?

Learning about Learning (sometimes meta-learning) builds on the key human capacity to think about our thinking (metacognition).

Learning about learning is not some distant or academic enterprise: it means to learn about one's lived experiences of learning, and in the process to develop a richer conception of learning.

Meta-learning covers a much wider range of issues than metacognition, including goals, feelings, social relations and context of learning.

what's this to do with learning?

Attempts to teach pupils "how to learn" by particular skills or strategies turn out to be ineffective, since learners may "possess" learning strategies, but not employ them, or employ them ineffectively. Learning is not a recipe, so the process of selection and use is crucial.

Learning about learning promotes reflection on learning, as well as enriching the range of possible action.

Greater understanding of one's own learning can include seeing how it varies across contexts. This is a crucial element in the transfer of learning. People with metacognitive awareness, are more likely to recognise when a strategy is applicable in a different-looking context.

Meta-learning plays a key role in a learner's self-regulation of learning.

Meta-learning promotes the versatile learner.

how do we go about it in a classroom?

First element:- noticing learning
This requires that we occasionally *stop the flow* to notice our learning and cumulatively build up a language for doing so. The best way of recounting our experience of learning is through a narrative style, telling the story of what we (increasingly) notice.

Second element: conversations about learning
This starts with a range of prompts which help learners examine and discuss their experience (see examples in next column)

Third element:- reflection.
This can be supported through writing in a learning journal, to capture and review aspects of the learning journey. As Lynne, 10 years, puts it: "As I write I notice and understand more too."

Fourth element:- making learning an object of learning
We may think of meta-learning as an additional cycle in the learning process through which metacognitive knowledge about learning is constructed just like any other knowledge, pieced together on the basis of fragmentary data from a range of experiences.
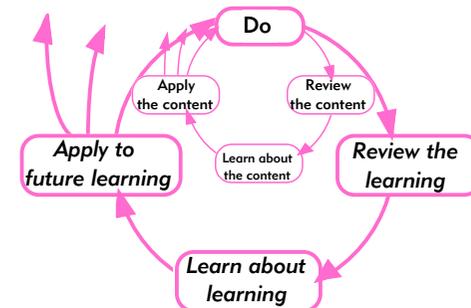
examples of prompts and enquiries

(i) Noticing things about learning,
- What is learning?
  – what do we mean? what is it not?
- When is it best? Where is it best?
- What helps your learning? (including, but not only, what teachers and others do)
- What steps or actions do you take in your learning?
- How did it feel?
- Does what you do and how it feels change as you go along?
- What surprises have you found?
- What hindered your learning?
- What do you learn for?
- What do you do with your learning?

(ii) Talking about learning,
starting to tell and re-tell stories of learning, with others leading to dialogue.
- Tell me about a really good learning experience
- What made it so good? What did you contribute?
- What does this tell you about you? About learning?
- How do you make sense of that?
- What puzzles you about that?
- What I notice in your story is …
- What differences do we see between our stories?

(iii) Reflecting on learning
developing some distance from the immediate experience
- What was it like six months ago?
- What connections or patterns do you see?
- What new understandings about your learning have emerged?

(iv) Meta-learning
- How can you plan to go about your learning?
- How can you monitor how your learning is going?
- How can you review how your learning has gone?
- How will you know that it has been as good as you can get it?

what holds us back?

- centuries of classrooms that did NOT talk about learning

- our own experience of school (and not noticing much about our own learning)

- the fact that this sort of practice is slow to start, since pupils do not have the practice

- the idea that there is some special language needed

- forgetting (or not knowing) that research demonstrates that

  - a focus on learning can enhance performance, whereas a focus on performance can depress performance;

  - the development of meta-learning can enhance performance;

  - learning about learning is a necessary element for being an effective learner in a range of situations.

Watkins C. (2001), *Learning about Learning enhances Performance*, National School Improvement Network (Research Matters series No 13)