

Effect sizes of some teaching and learning strategies and other influences on learning¹

Effect size	DOMAIN	INFLUENCE ON LEARNING
1.44	Student	Self-reported grades (in cooperation with the teacher) or High expectations for each learner - remarkably accurate, minority students less accurate in reporting, can serve as barrier if student has a negative attitude vis-a-vis their own abilities
0.90	Teaching	Teacher credibility
0.90	Teaching	Providing formative evaluation
0.88	Teacher	Micro teaching - teacher teaching a lesson and then engaging in post-lesson discussion about the lesson, possibly taping lesson
0.75	Teacher	Teacher clarity - clear speech, clear intentions (expectations), clarity in how achievement will be measured and actually walking the talk/walk, organised materials and work processes, clear explanations, guided practice
0.75	Teaching	Feedback - multi-directional, involves re-teaching when necessary
0.74	Teaching	Reciprocal teaching - using strategies such as summarising, questioning, clarifying, clarifying and predicting - teachers and students take turns in leading a dialogue - plenty of scaffolding
0.72	Teacher	Teacher-student relationships
0.71	Teaching	Spaced vs. mass practice - spacing out learning of a topic over several days instead of doing it all at once in a concentrated fashion
0.69	Teaching	Meta-cognitive strategies - raising awareness about the learning process, getting students to analyse their own thinking and learning
0.67	Student	Prior achievement
0.67	Curricula	Repeated reading programmes - rereading and working with a text
0.65	Curricula	Creativity programmes
0.64	Teaching	Self-verbalisation & self-questioning skills and habits
0.63	Teaching	Teaching study skills
0.61	Teaching	Teaching of problem-solving
0.61	Teacher	Not labelling students
0.60	Teaching	Concept mapping
0.59	Teaching	Co-operative versus individualistic learning
0.59	Teaching	Direct instruction - does not mean teacher lecturing from the front of the classroom - includes clear goals/ outcomes/ criteria for success - builds student commitment/ engagement - can include modelling, labelling, comparing and categorising, comparing student work with exemplars

¹ based on Hattie, J. (2012) *Visible Learning for Teachers: Maximizing Impact on Learning*. Oxon: Routledge. See Hattie for complete list.

	- guided practice including help from teacher during peer co-operative work - closure for lesson by returning to goals/outcomes and learning process - independent practice	
Teaching	Mastery learning	0.58
Teaching	Worked examples - example of what success looks like - problem statement + appropriate steps to the solution	0.57
Teaching	Peer tutoring	0.55
Teaching	Co-operative versus competitive learning	0.54
School	Classroom cohesion - teacher and students are working toward positive learning gains - avoiding cliquishness, apathy, friction and disorganisation	0.53
School	Peer influences	0.53
Home	Home environment	0.52
Curricula	Outdoor & adventure programmes	0.52
Teacher	Professional development	0.51
Teaching	Stating goals	0.50
Curricula	Second/third chance programmes	0.50
Home	Parental involvement	0.49
Teaching	Questioning - less focus on facts and more on fostering higher order thinking	0.48
Student	Positive self-concept	0.47
Student	Early intervention	0.47
Curricula	Writing programmes - understanding audience/ goals - teaching strategies for planning, revising and editing - getting peer feedback, working in teams - teaching writing processes - exemplars, sample structure	0.44
Teacher	Teacher expectations - high expectations for all - willing to be 'surprised' by someone's progress	0.43
Student	Reducing anxiety	0.40
Curricula	Social skills programmes	0.39
School	Class size	0.21
Curricula	Extra-curricular programmes	0.19
Teaching	Matching style of learning	0.17
School	Summer vacation	-0.02
School	Retention - not allowing a child to move to the next grade level at the end of an academic year	-0.16
Home	Television - more than 2 hours of viewing per day	-0.18
School	Mobility - changing schools - making a friend in the first month is a crucial factor in reducing the negative effect of changing schools	-0.34

Scaffolding Content and language



Generating Electricity

Process:

water → *turbine* → *dynamo* → *electricity*

Adjectives:

moving *circular* *falling* *large* *circular* *metal* *magnetic*

Adverbs:

rapidly *directly* *independently* *early* *efficiently*

Verbs:

flow *turn* *generate* *convert* *rotate* *produce*

Nouns:

dynamo *electric motor* *rotary convertor* *alternator* *steam engines*

Related concepts

power *energy* *power generation* *direct current* *conduction*

Repeating nouns instead of using pronouns and synonyms.
(Language needs to be used several times before it takes hold)

Using short sentences.

Bolding or otherwise highlighting key new words and phrases that need to be learned.

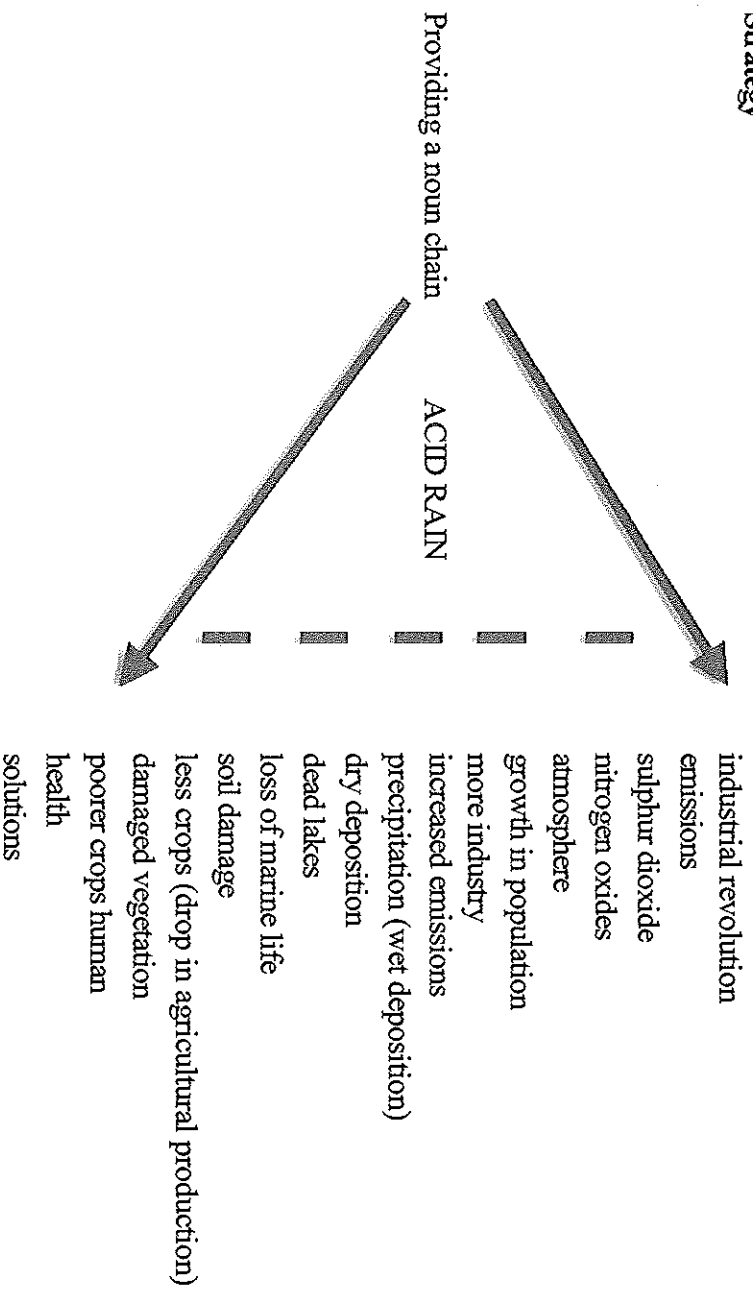
Providing explanations in parentheses.

NB: One can simultaneously reinforce key content by using underlining.

William the **Conqueror** invaded and **conquered** present day England in 1066. William the **Conqueror** ruled the **conquered** land through a network of friends and **nobles** (Barons). William the **Conqueror** enticed these nobles (Barons) to move permanently from France to England. Each noble was **encouraged to build a castle** in a strategic location. The nobles ruled their own area. These barons **collected taxes**. William the **Conqueror** built a fortified castle in London. This castle is now called the Tower of London. English kings and queens were resident (lived) in this fortress or castle for almost 500 years.

A structural language and content scaffold




Strategy



Rationale

The noun chain, using limited language, provides some of the links between the causes and consequences of acid rain. Links create meaning and foster critical thinking. Further, the key language is presented in a meaningful context. The language is thus more likely to be retained and put to later use. Nouns chain can also serve as a structure for organizing student presentations or written work.

SCAFFOLD FOR DEVELOPING A LINE OF REASONING

<p>Introduce the argument to the reader. e.g. why it is a particularly relevant topic nowadays or refer directly to some comments that have been voiced on it recently.</p>

<p>Reasons against the argument State the position, the evidence and the reasons.</p>

<p>Reasons in favour of the argument. State the position, the evidence and the reasons.</p>

<p>After summarising the two sides, state your own point of view, and explain why you think as you do.</p>

Sample language scaffold: There are many reasons why ...

It is	essential helpful important necessary true	to	bear in mind consider point out remember take into account	that	...
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Sample language scaffold: For continuation

<p>First, First of all, Second, In addition, Furthermore, Another reason is Subsequently, Eventually, Next,</p>	<p>we have I would like it is important</p>	<p>to consider to weigh to evaluate to determine</p>	<p>...</p>
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SCAFFOLD FOR PERSUADING OTHERS

INTRODUCTION

Introduce the topic briefly in general terms.
State your own point of view.
Explain what you plan to prove.



COUNTERARGUMENTS

Explain briefly the main objections to your argument.
Provide evidence and your reasons.



YOUR POINT OF VIEW

Explain the arguments that support your own view,
Provide evidence, reasons and examples.



CONCLUSION

Summarize the key part of your argument.
State your key conclusion.

Language scaffold for presenting another point of view

The author	argue(s) assert(s) claim(s) point(s) out maintain(s) say(s)	that	...
A research study conducted by	is/are of the opinion		
Researchers at the University of Science			

Language scaffold for criticizing another point of view

This These views The statement ...X...	is/are	highly debatable. incorrect. highly speculative. not always the case. not necessarily true. open to doubt. opinion(s) not fact(s). unlikely to be true.
	are not grounded in evidence.	
I disagree with X when he	argues claims proposes states suggests writes	that...