

What Works?

Displaying Outcomes using Effect Sizes on What Works

What Works is a database of evidenced interventions that aim to support children and young people's speech, language and communication hosted by The Communication Trust.

Decisions about which interventions are listed on the database are made by a moderating group of highly experienced academics and practitioners. The group check each intervention against criteria for standards of evidence; indicative, moderate or strong. The intervention's evidence rating is then displayed on the site to inform users of the strength of the evidence base behind it.

User feedback



Over recent years, users have told us that the emphasis on the evidence rating on What Works can be confusing. It is important to know that a 'strong' evidence rating doesn't necessarily mean that the intervention is likely to work well.

In fact, in some cases there may be strong evidence that the intervention has no positive effect at all, or even that there is a negative effect on children and young people's speech, language and communication skills; whereas indicative evidence (although meeting a lower standard of evidence) may suggest that it is likely to have the effect you want.

How can What Works support users to interpret the outcomes of an intervention?

To understand what the evidence actually says about an intervention, it is important to look at the strength of the intervention's outcomes for children and young people. The best way to do this is to read the journal articles and consider:

- The strength of the effects that researchers report.
- How well designed the studies are.

Many practitioners may not have time to read or have access to the required journal article. The What Works database enables practitioners to work from summaries of the relevant papers to the intervention.

The evidence ratings (strong, moderate, indicative) on What Works already supports users to decide how well designed studies are. The new **display of effect sizes** on What Works will support users with interpreting children and young people's outcomes for interventions based on the strength of effects.

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What is an effect size?

An effect size is a number representing the size of a research result (the difference between the treatment and the control group on a given outcome in a particular study). It shows us not just whether or not an effect is statistically significant, but how statistically significant it is. These have been calculated from the research studies included for each intervention.

Results from studies have been converted into 'Hedges G', which is a standardised measure of effect size. 'Hedges G' is calculated using the difference between the outcomes for the treatment group in a study, and the outcomes for the control group.

How will this information be shown?

For each intervention, there will be a graphic displaying:

- the largest/strongest effect size
- the smallest/weakest effect size
- the effect size for the primary outcome as stated by the researchers (in other words what the researchers were primarily looking at in their study)
- The reference for the study from which the effect sizes have been calculated

How can I interpret effect sizes?

Effect sizes can be roughly classified as small (0.2), medium (0.4) or large (bigger than 0.8). An effect size of less than 0.4, including negative numbers, shows that the intervention did not have a sufficiently great effect on that particular outcome for the children and young people in that study for you to be likely to see a positive effect in a clinical situation.

These interpretations are just a guide, so although they can give you a good starting point for considering how effective an intervention is according to the studies, you do still need to consider all the clinical parameters of your own intervention.



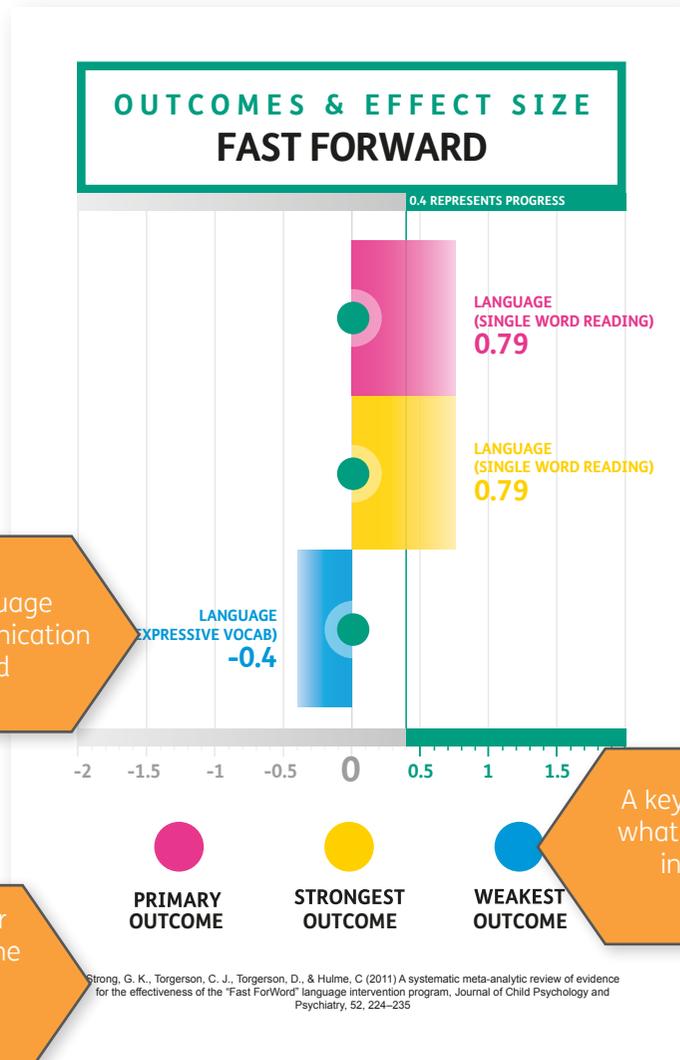
Cohen (1969, p23) describes an effect size of 0.2 as 'small' and gives to illustrate it the example that the difference between the heights of 15 year old and 16 year old girls in the US corresponds to an effect of this size.

An effect size of 0.5 is described as 'medium' and is 'large enough to be visible to the naked eye'. A 0.5 effect size corresponds to the difference between the heights of 14 year old and 18 year old girls.

Cohen describes an effect size of 0.8 as 'grossly perceptible and therefore large' and equates it to the difference between the heights of 13 year old and 18 year old girls.

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Example display



The specific speech language and communication outcome and effect size.

The reference for the paper that the effect sizes have been calculated from

A key to indicate what the colours in the display represent.

Are there any limitations?

For some interventions there isn't enough information available to calculate all of the effect sizes, so for some only one or two of the three outcomes mentioned are calculated, but for all those with the necessary information, this is displayed as easy-to-read 'pop-up' diagrams on the intervention's What Works page.