A Practitioner's Review of Visible Learning for Mathematics Classrooms

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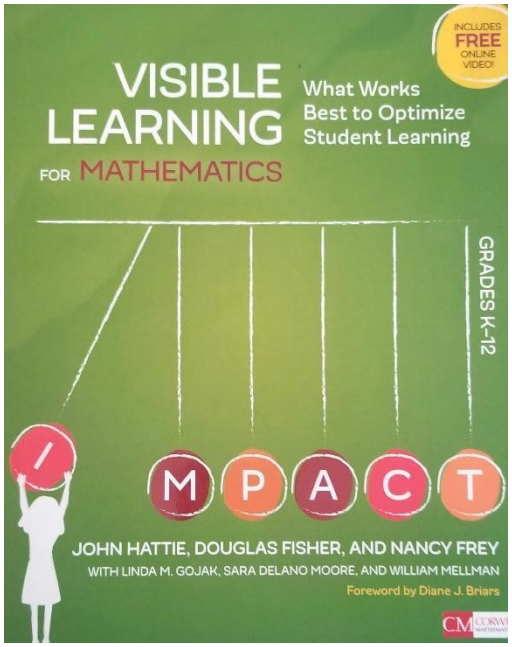
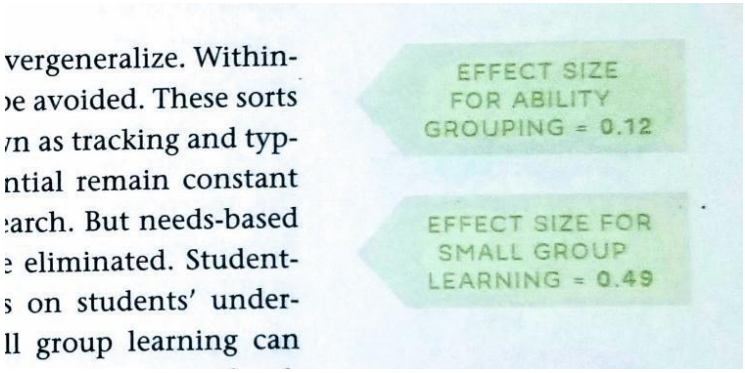
What is Visible Learning?



Visible learning for mathematics, grades K-12: What works best to optimize student learning. (VL4M) is a sequel to an earlier, more succinctly titled, Visible Learning book by the same primary author John Hattie. The Visible Learning series attempts to draw conclusions about learning and teaching using meta-analysis and effect size. This work has proven to be an immensely popular resource for educators, policy advocates, politicians, and administrators. The reason is that it attempts to quantify and rank a wide range of practices and influencers in student learning. A meta-analysis is a type of research that summarizes and combines individual studies to provide a sort of consensus view on a research topic. Hattie and his coauthors have taken this idea even further by summarizing meta-analysis, thus further generalizing results, and by using a consistent measure of effect size, which intends to indicate how impactful each of the practices is in comparison to the others. VL4M focuses on presenting those results within the context of k12 mathematics education.

Taking a Closer Look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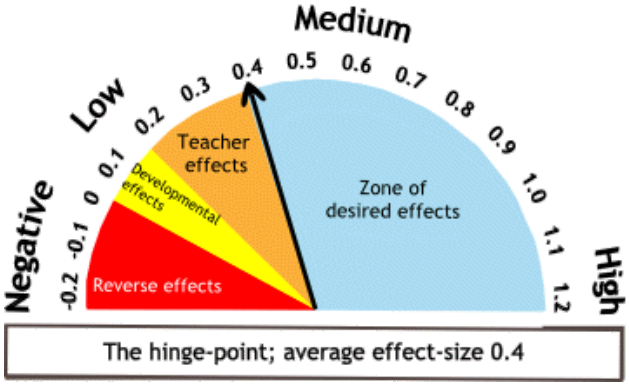
EFFECT SIZE FOR ABILITY GROUPING = 0.12

EFFECT SIZE FOR SMALL GROUP LEARNING = 0.49

Let us look at how VL4M discusses grouping in the context of math education (page 227). Teaching in groups is not a one size fits all discussion. Schools may ability group students by putting them in different labeled courses such as advanced or remedial sections at the same grade level or content. This ability grouping is common even though it does nothing to close the achievement gaps and usually serves to widen the gap between two disparate groups. However, this is only one form of ability grouping. Imagine that the students are grouped within the same class based on pre-assessments and then taught in small groups, each containing a third of the students based on the current level of performance on the pre-assessment. While this certainly sounds like a solid use of formative assessments and data-driven instruction, the authors found it to have little to no positive effect.

So, what is the effective strategy to take away from research on ability grouping and small group learning? Small group learning can be effective, but only when those groups are fluid and not fixed for more than one lesson, thereby avoiding labeling and stratifying students. Furthermore, small groups should not be decided by the general level of mathematics ability or by test scores. However, grouping students based on a *specific skill deficiency* or *common mistake* in their process can be effective at closing achievement gaps.

Conclusion



There is no doubt that Hattie's research and Visible Learning framework have shaped and will continue to shape educational research, theory, politics, and practice. This book aims to focus on putting the Visible Learning approach and philosophy into practice specifically for the context of mathematics teaching. It provides research-based strategies and data-driven practices without robbing classroom teachers of the autonomy and creativity which makes k12 mathematics come alive in the classrooms of great educators. VL4M ultimately provides an excellent overview of the research in math education and lets the reader decide where to tweak their practices.

References

Hattie, J. (2017). *Visible learning for mathematics, grades K-12: What works best to optimize student learning*.

**All images are taken from the text by the reviewer*