



Cost

£££££

Evidence strength



Impact (months)

+5

Effect size

0.40

What is it?

Traditional teaching keeps time spent on a topic constant and allows pupils' 'mastery' of curriculum content to vary. Mastery learning keeps learning outcomes constant but varies the time needed for pupils to become proficient or competent at these objectives.

Mastery learning breaks subject matter and learning content into units with clearly specified objectives which are pursued until they are achieved. Learners work through each block of content in a series of sequential steps and must demonstrate a high level of success on tests, typically about 80%, before progressing to the next unit. Those who do not reach the required level are provided with additional tuition, peer support, small group discussions, or homework, so that they can reach the expected level.

How effective is it?

There are a number of meta-analyses which indicate that, on average, mastery learning approaches are effective, leading to an additional five months' progress.

The effects of mastery learning tend to cluster at two points; two of the meta-analyses show little or no impact, while the rest show an impact of up to six months' additional progress. This variation implies that making mastery learning work effectively is challenging.

Mastery learning appears to be particularly effective when pupils work in groups or teams and take responsibility for supporting each other's progress (see also [Collaborative learning](#) and [Peer tutoring](#)). It also seems to be important that a high bar is set for achievement of 'mastery' (usually 80% to 90% on the relevant test). By contrast, the approach appears to be much less effective when pupils work at their own pace (see also [Individualised instruction](#)).

Mastery learning may also be more effective when used as an occasional or additional teaching strategy: programmes with durations of less than 12 weeks have tended to report a higher impact than longer programmes. Schools may wish to consider using mastery learning for particularly challenging topics or concepts, rather than for all lessons.

Mastery learning appears to be a promising strategy for narrowing the attainment gap. Low-attaining pupils may gain one or two more months of additional progress from this strategy than high-attaining students. Teachers need to plan carefully for how to manage the time of pupils who make progress more quickly.

Mastery learning, despite being an effective intervention to develop students' achievement by considering their individual differences, is rarely explored in the Arab world. Very few studies investigated the impact of mastery learning on students' achievement. Furthermore, teachers' opinions and understanding about this approach are still vague. In Algeria for instance, teachers refrained from implementing mastery learning approach because their syllabus and textbooks were not aligned together, nor were they aligned with this active learning pedagogy. Additionally, having large class sizes, a heavy syllabus, and lack of adequate teacher training programs hindered the implementation of differentiated instruction in the classroom.

Where studies have examined this approach, they have found evidence of effectiveness in developing students' academic and personal competencies. For instance, in an experimental study conducted in 2017 among tenth grade students in Palestine, students who learned grammar through the mastery learning model showed better results on the posttest when compared with their peers using the traditional method. Not only that, students' interest about the subject matter improved and their self-efficacy levels increased.

Overall, mastery learning research in the Arab world is still scarce. A majority of these studies were mostly conducted among secondary school learners. That is why, researchers are recommended to investigate the most effective strategies through which teachers can apply mastery learning for both primary and secondary level. Further research is also recommended to look at teachers' perceptions and to investigate the best types of training programs that would prepare them for mastery learning implementation in their instruction.

How secure is the evidence?

The evidence base is of moderate security. There is a large quantity of research on the impact of mastery learning, though much of it is relatively dated and findings are not consistent. In addition, most meta-analyses examining mastery learning use older statistical techniques that may be less accurate.

Despite these potential limitations, the average effect size is consistent with a more recent study in the US, which found that mastery learning approaches can increase learning by six months or more in mathematics for pupils aged 13 to 14.

It is possible that this lower estimate of progress is more relevant to English schools than some of the older studies. An alternative explanation is that the Mathematics Mastery programme did not include some of the features of programmes that were previously associated with higher impacts. For example, although additional support was provided to struggling pupils, classes did not delay starting new topics until a high level of proficiency had been reached by all pupils.

What are the costs?

Few additional resources are required to introduce a mastery learning approach. Professional development and additional support for staff is recommended, particularly in the early stages of setting up a programme. Estimates are less than 80.0 GBP (102.9 USD, 73.0 JOD) per pupil, indicating very low overall costs.

Additional small group tuition and one-to-one support are also likely to be needed for those pupils who take longer to learn a topic. Many schools will provide this support using existing staff and resources without incurring extra financial cost. However, school leaders should be aware of the extra staff time required and think carefully about other activities they might need to cut back on in order to provide this additional support.

Costs originally calculated in GBP; USD and JOD calculated via oanda.com on 22/09/20.

As yet there is no information about local costs.

What should I consider?

Implementing mastery learning is not straightforward. How will you plan for changes and assess whether the approach is successful within your context?

A high level of success should be required before pupils move on to new content – how will you monitor and communicate pupil progress?

How will you provide opportunities for pupils to take responsibility for helping each other with mastering content?

Mastery learning seems to be effective as an additional teaching strategy. How will you decide which topics and concepts are appropriate for a mastery learning approach?

How will you provide additional support to pupils who take longer to reach the required level of knowledge for each unit?

