THE 10 MOST IMPORTANT TEACHING & LEARNING STUDIES OF THE LAST 70 YEARS

By teacherCPDacademy.com

There is no doubt that the field of educational psychology has made remarkable progress over the past century. The discoveries made along the way have given educators worldwide the power to accelerate student learning.

It would be impossible to pick a definitive list of the only studies all educators need to know. However, we feel that some studies are particularly significant. So, let's hit the rewind button and revisit the 10 studies that have shaped the very essence of our educational practices today...

THE LIMITED CAPACITY OF WORKING MEMORY – 1956

One discovery that formed the basis of Cognitive Load Theory is Miller's 1956 study. He reviewed his own work along with other available literature during the time to investigate memory span, measuring the maximum length of a random word list that could be recalled with the items in order. He found that roughly seven items could be recalled in normal adults, give or take two.

While this number has since been re-investigated, this finding ultimately proved the limited capacity of working memory. It found that presenting students with too much information could lead to an overload and hinder their learning – kickstarting the research into Cognitive Load Theory.

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THE IMPACT OF TEACHERS' EXPECTATIONS – 1966

Rosenthal and Jacobson were some of the earliest to study how teacher expectations can shape students' learning outcomes. They falsely told teachers that some of their students had been identified as potential high achievers that would bloom over the course of the year. These students were in fact chosen at random.

When they went back at the end of the school year, they found that the students who were chosen were more likely to make larger gains in their academic performance over the course of the year than the control group.

This shows that when teachers have high expectations, they subconsciously alter their behaviours to be more supportive, allowing student achievement to be maximised.

MARSHMALLOWS AND SELF-CONTROL – 1990

In the early 1970s, researchers asked 3-5-year-olds to refrain from eating a marshmallow for 15 minutes. In return, they would be rewarded with two marshmallows. After 20 years, the researchers conducted follow-up studies and tracked each child's progress in a number of areas.

They found that the longer the students waited for their marshmallows as young children, the more likely they were as adults to be more attentive, socially competent, academically successful, verbally fluent and able to deal to deal with frustration and stress. In order words, the study proved that the ability to delay gratification was critical for success in life.

GROWTH MINDSET – 1998

Mueller and Dweck pioneered the theory of Growth Mindset with their study published in the late 1990s. Students were asked to complete a problem-solving game and were then told that they had gotten 80% of the questions right and praised on different attributes.

They found that children who were praised for their natural intelligence were more likely to choose easier future tasks that would make them look smart, whereas children who had been

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praised for their effort tended to choose tasks that would help them learn new things, which in turn translated to better future performance.

Subsequent studies on Growth Mindset have produced a fascinating and large range, though a clearer if perhaps more nuanced version of where we are with this area of research has started to emerge.

DELIVERING FEEDBACK EFFECTIVELY – 2007

Understanding the significance of feedback in teaching, researchers Hattie and Timperley dived into the vast sea of literature to uncover the strategies that hold the key to effective feedback in the classroom. They found that in order to be most effective, feedback must answer three questions:

1. *Where am I going?* – This makes your goal crystal clear

2. *How am I going?* – This gives an indication of progress

3. *Where to next?* – It focuses on strategies needed in order to improve

The researchers also identified four types of feedback: self, task, process, and self-regulation. They noted that it's not about one type being superior to another, although self-level feedback can have negative consequences. Each type of feedback offers unique benefits. Task feedback is helpful when students misinterpret instructions, while self-regulation feedback benefits novice learners. Process feedback encourages deeper learning by prompting students to seek more information.

EFFECTIVE STUDY STRATEGIES – 2013

In a comprehensive review of academic papers in 2013, Dunlosky evaluated various learning strategies and ranked them based on their evidence base.

Retrieval Practice and Spacing emerged as the most effective techniques, benefiting learners of all ages and abilities, and consistently enhancing performance across different tasks and educational settings. Elaborative Interrogation, self-explanation

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and interleaved practice demonstrated moderate utility, although the evidence supporting their efficacy was somewhat limited.

On the other hand, techniques such as summarisation, highlighting, keyword mnemonic, imagery and re-reading ranked lowest in terms of utility and are not recommended as primary learning tools.

MOBILE PHONES AND CONCENTRATION – 2014

Driven by the increasing prevalence of technology, Thorton's team of researchers became intrigued by the potential influence of mobile phones on concentration. To investigate this, students were asked to complete a concentration task with either a mobile phone or a notepad nearby, within their line of sight.

Interestingly, the presence of a mobile phone, regardless of ownership, resulted in a significant decrease in attention, concentration and overall task performance. This study, though not replicated in full later, has paved the way for an increasing closer examination of the impact of mobile phones, something that is arguably more important now than ever.

HOW QUICKLY WE FORGET THINGS – 2015

In the 1880s, psychologist, Hermann Ebbinghaus conducted a famous study revealing that people forget information over time unless they revisit it. His forgetting curve suggested that students usually forget the majority of what they have learned within 24 hours. After that, forgetting continues, albeit at a much slower rate.

More than 130 years later, Murre and Dros replicated and updated Ebbinghaus's findings using modern methods. While their findings generally aligned with the original study, an intriguing discovery emerged: after 24 hours of learning, participants experienced a memory boost, remembering more on the morning of the second day than on the night of the first. This improvement was due to the negative impact of fatigue on memory and the restorative power of sleep.

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The key takeaway here is to view the forgetting curve as a guide rather than a rigid rule.

HOW TO FOSTER RESILIENCE – 2016

More recently, leading experts in resilience, Fletcher and Sarkar reviewed existing studies on the topic to come up with the most comprehensive set of suggestions to date. They found that creating a programme that develops and enhances resilience should focus on three distinct areas:

1. *Developing personal qualities* – These include but are not limited to high personal standards, optimism, competitiveness, intrinsic motivation, self-confidence, self-talk, focusing on what is important and what you can control.

2. *Providing a facilitative environment* – Ensuring the learning environment has high levels of challenge and support.

3. *Instilling a challenge mindset* – This may be done by asking students to concentrate on positive and helpful thoughts so that they see things as a challenge and not a threat.

By using this three-pronged approach, we can hopefully help our students develop the resilience needed to thrive both in and outside of school.

METACOGNITION – 2017

With a growing interest in Metacognition, Chen's research team investigated the impact of enhancing student Metacognition through answering study skills questions. They compared these students with a control group and monitored their study habits and exam performance. They found that to improve Metacognition, students should reflect on three questions:

1. Which resources do I need to help me study?

2. Why are those resources helpful?

3. How will I use these resources?

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Asking these questions improved students' self-reflection and how effective they found their study resources when learning. They also felt less stressed and went on to score one-third of a grade higher in their classes.

FINAL THOUGHTS

The last 70 years have witnessed significant advancements in Teaching & Learning, driven by influential studies that have shaped educational practices. From understanding the power of feedback to identifying evidence-informed strategies like Retrieval Practice and Spacing, these studies have revolutionised our approach to education.

It is exciting to think what might happen in the next 70 years – which insights we might gather from research and how this may drive future learning.

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