

This proposal investigates successive relearning (SR) as a means to enhance student learning outcomes and well-being in educational environments. SR is grounded in the science of learning and involves recalling taught material from memory (retrieval practice) on several occasions separated by intervals (spaced practice). Mastery is achieved by providing corrective feedback for recall errors followed by subsequent recall opportunities. A small but consistent evidence base suggests that SR significantly increases both the amount of information that students remember and its durability. While preliminary findings in the field of SR are promising, the existing evidence base is small and has several limitations. Addressing these limitations is critical for the development of both theoretical frameworks of learning and related practice in the field of education, and to enable educators to design curricula that foster optimal learning experiences and outcomes for students.

The current proposal addresses five limitations in SR research across two large experimental studies. Both studies will consider time-on task as a potential cause of SR's effectiveness, a factor that has not been properly controlled in previous research (Limitation 1). In addition, it is unclear from existing research how two key factors, frequency (the number of practice sessions) and timing (the intersession interval) interrelate across different learning periods (Limitation 2). Recent evidence suggests that their relationship varies with the length of time that information needs to be remembered. We will therefore consider the relationship between the frequency and timing of relearning across several different retention intervals. These two studies will inform educators how best to utilise SR within their own programmes of study.

Current research has not explored mechanisms that potentially augment or underpin the learning advantages associated with SR (Limitations 3, 4, and 5). It is possible that SR leads to a shift in students' learning strategies that enhances the learning of new material. Here, we specifically explore whether varying the learning schedule of to-be-learned material has a differential impact on the development of learning strategies.

Several factors that typically vary across individuals have been related to classroom achievement. These include metacognitive accuracy (student self-assessments of their own academic performance), attentional control (student reports of how well they focus and shift attention to learn), academic self-efficacy (student beliefs that they can effectively learn the material) and worry/ anxiety (student reports of anxious affect associated with learning and performance). To generate a definitive profile of the link between SR and the broader benefits on student mental health and well-being in the classroom, our two experimental studies will measure change in these four variables over SR practice.

In the latter part of the proposal, we aim to enhance the impact of our research. First, we will extend our basic experimental findings to a classroom environment to demonstrate its translational impact. We will compare an SR schedule with a restudy schedule in an undergraduate module using optimal frequency and timing parameters established in Studies 1 and 2. By applying the same experimental rigour of the earlier studies, we will better understand the specific benefits of SR on attainment in practice. This classroom intervention will also explore the value of SR on students' metacognition, mental health, and well-being and on the development of effective learning strategies. Second, we will create a LEAP website and start to work in partnership with Wyvern College to enable them to use this website to apply relearning schedules to their own teaching. Over time, this website will be amended to allow students to enhance their own learning.