Teaching early phonemic awareness

Is there a magic number of hours?

- Reading development starts in early education.
- It can be improved through developing skills such as phonemic awareness (PA).
- How much time should educators devote to teaching PA skills, when resources are often limited?
- Dr Florina Erbeli at Texas A&M University in the USA investigated the optimal amount of PA instruction.
- Her analysis revealed that 10.2 hours of PA instruction was most effective in enhancing students' PA skills.

Reading is an essential skill that gives us access to a world of written communication. The foundations of these skills develop during our preschool years. Often, they begin with phonemic awareness (PA), which is the recognition and manipulation of distinct units of sound within our language. In English, an example of a phoneme would be the ‘p’ sound within the word tap, which makes it distinctive from similar words such as tag, tab, and tan.

Prior research has demonstrated that phonemic skills are a strong predictor of reading ability. Prior to formal education, children often begin to develop basic phoneme perception when their language skills start to emerge. During their formal education, providing children with specific PA teaching helps them grasp how these sound elements are represented within written words. However, it is less clear how much emphasis and resources teachers should place on this specific instruction within early school years to maximise their learning.

Dr Florina Erbeli from the Department of Educational Psychology at Texas A&M University, USA, has undertaken research to determine the optimal hours of PA instruction that should be administered to children in Kindergarten and First Grade (aged 5 or 6 years old). The study focuses on measuring the cumulative dosage of PA instruction, defined as the number of minutes taught per session multiplied by the frequency of sessions held per week and the total number of weeks they run for.

Determining the optimal dosage
Prior research into PA instruction has often followed a linear approach, which assumes that as one element increases per one unit, other elements are impacted by a constant degree of gains. For example, it would assume that if PA instruction dosage is continually increased in each unit of time, the children’s PA skills would improve by a constant amount of gains.

Erbeli and her team believe this approach does not always provide a realistic representation of how learning occurs, as there is the possibility of diminishing returns once a certain level of proficiency has been reached (a non-linear approach). This means that after receiving a certain amount of teaching, the students’ progress slows down. It does not mean that learning stops – it just happens at a pace that is not significantly different from standard teaching approaches. Once there are diminishing returns, specific PA instruction wouldn’t be the best use of teaching resources.

In her research, Erbeli’s team took a non-linear approach to better understand the relationship between the cumulative dosage and effectiveness of PA teaching.

The effectiveness of PA instruction increased up to 10.2 hours of total instruction time, after which the effects declined.

Read more at: researchfeatures.com
It demonstrated that the effectiveness of PA instruction increased up to 10.2 hours of total instruction time, after which the effects declined. Erbeli emphasises that this does not mean teaching beyond this point has a negative effect; it just means that the progress being made by students decreases to a slower rate.

Interestingly, when the teaching of letters is included alongside PA skills, the model takes a different appearance. It looks like a U shape and demonstrates an increase in effectiveness at 16 hours. It is theorised that this difference between the models may be because once letter names and sounds have been mastered, the instruction of letters rapidly helps to accelerate the learning process of PA skills.

A magic number?
Erbeli and her colleagues have been careful to emphasise that 10.2 hours is not a magic number for PA instruction. While data were analysed from several studies, these often involved one-to-one teaching or students at risk for reading disabilities. Therefore, the data do not represent a typical classroom environment. The 10.2 hours could be interpreted as an additional amount needed on top of standard teaching.

Erbeli also highlights that this research does not tell us how much instruction or support in PA an individual child may need. Pretests can be used to establish students’ proficiency in letter naming and sounds. In turn, the dosage of PA instruction can then be adjusted to suit individuals’ needs or that of a specific classroom. Another main obstacle was finding enough dosage-related data from prior studies. The team calls on the research community to systematically report this information to assist future projects.

Key learnings for PA instruction
While the findings from this research are not a blanket solution, Erbeli argues that they demonstrate the benefit of promoting PA learning in the early school years. Specific instruction in PA skills, with and without the addition of letter learning, was shown to play a vital role in facilitating children’s reading skills. Our study shows that PA instruction does not need to be lengthy to exert its strongest effect on PA skills. We found out that PA instruction students receive does not need to be prolonged to have its most potent effect. We discovered that focused PA instruction, totalling approximately 10.2 hours on average, is sufficient. It appears that pre-kindergarten through first-grade students, on average, reach the mastery of PA skills at around 10.2 hours of PA instruction. In other words, by November of their kindergarten year, children, on average, will have acquired their PA skills. Additionally, our results indicate that the effectiveness of PA instruction on PA skills further improves after about 16 hours when letters are introduced. Therefore, teachers can confidently progress to phonics instruction and decoding once students demonstrate some of the PA skills, such as blending and segmenting, without needing to delay. In other words, the dosage of PA instruction should be regulated by how long it takes for their students to acquire the PA skills that are taught, but, on average, that occurs at around 10.2 hours when the effect is greatest. Having longer PA instruction will not harm the students; our study shows that the effect might diminish, but it does not suggest that after this optimal time, PA instruction has a negative effect. It’s essential to note that our study’s findings should not dictate specific time allocations for PA instruction in every classroom or for every child. Instead, teachers should use progress monitoring data to determine the ideal dosage for their classroom or individual students. On average, this dosage will be at approximately 10.2 hours.

Are you planning on undertaking further research relating to optimal PA instruction?
Yes, indeed. There remain many unanswered questions regarding the optimal dosage of PA instruction. So, stay tuned for further research from the Erbeli lab.