



CICLO DE CONFERENCIAS

Práctica educativa informada desde la evidencia científica

¿Por qué es valioso el conocimiento científico en educación?

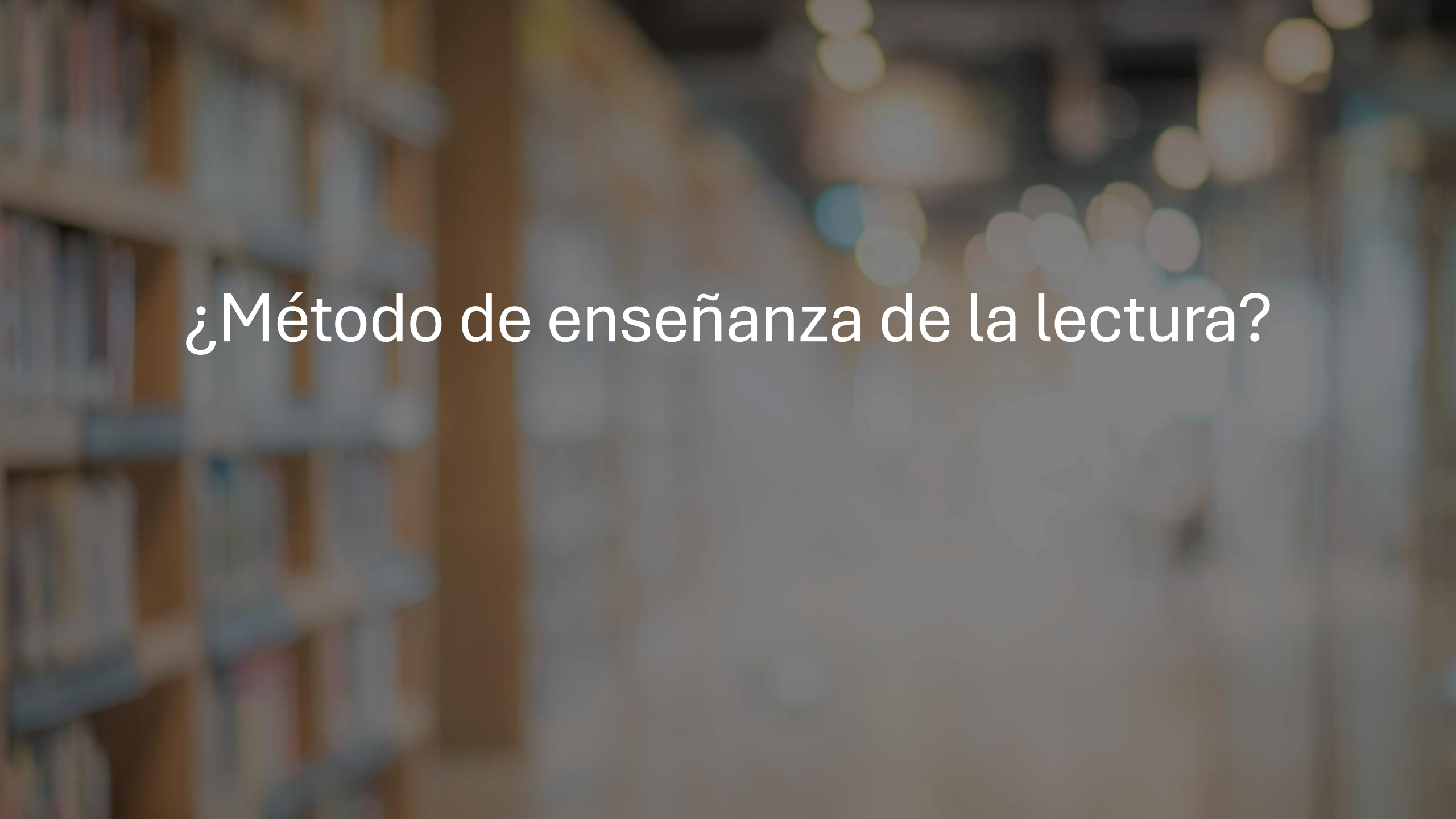
[Marta Ferrero]



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¿CÓMO TOMARÍAIS UNA DECISIÓN SOBRE...?



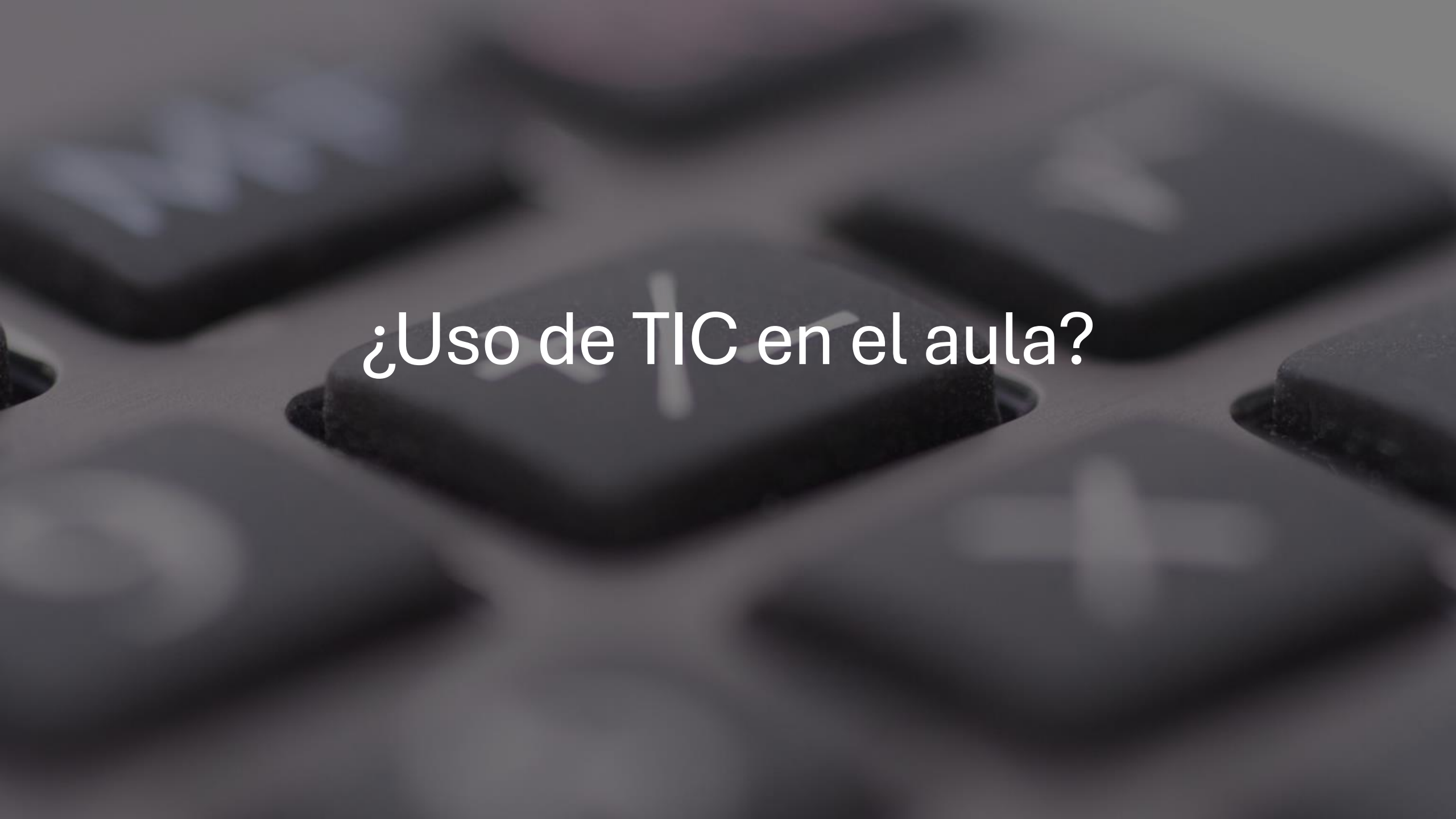
¿Método de enseñanza de la lectura?

¿Repetición de curso?





¿Estrategias de aprendizaje?

A close-up, slightly blurred photograph of a computer keyboard. The keys are dark, and the lighting creates soft highlights and shadows, emphasizing the texture and layout of the keys. Overlaid on the center of the image is the text '¿Uso de TIC en el aula?' in a clean, white, sans-serif font.

¿Uso de TIC en el aula?

PROCESO DE TOMA DE DECISIONES

—

Constante

Con mayor o menor premura

Principio de beneficencia

Experiencia propia y ajena

Preferencias

Intuiciones

SABIDURÍA PRÁCTICA



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¿Es suficiente la **sabiduría práctica** para una
toma de decisiones adecuada?

SABIDURÍA PRÁCTICA



- **Experiencia propia y ajena**
- Intuiciones
- Preferencias

SABIDURÍA PRÁCTICA

- Útil pero equívoca y poco generalizable
- Intuiciones
- Preferencias



SABIDURÍA PRÁCTICA



- Experiencia propia y ajena
- **Intuiciones**
- Preferencias

SABIDURÍA PRÁCTICA

- Experiencia propia y ajena
- Nos pueden llevar a error
- Preferencias

Learning Styles

Concepts and Evidence

Harold Pashler,¹ Mark McDaniel,² Doug Rohrer,³ and Robert Bjork⁴

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SUMMARY—The term “learning styles” refers to the concept that individuals differ in regard to what mode of instruction or study is most effective for them. Proponents of learning-style assessment contend that optimal instruction requires diagnosing individuals’ learning style and tailoring instruction accordingly. Assessments of learning style typically ask people to evaluate what sort of information presentation they prefer (e.g., words versus pictures versus speech) and/or what kind of mental activity they find most engaging or congenial (e.g., analysis versus listening), although assessment instruments are extremely diverse. The most common—but not the only—hypothesis about the instructional relevance of learning styles is the matching hypothesis, according to which instruction is best provided in a format that matches the preferences of the learner (e.g., for a “visual learner,” emphasizing visual presentation of information).

The learning-styles view has acquired great influence within the education field, and is frequently encountered at levels ranging from kindergarten to graduate school. There is a thriving industry devoted to publishing learning-styles tests and guidebooks for teachers, and many organizations offer professional development workshops for teachers and educators built around the concept of learning styles.

The authors of the present review were charged with determining whether these practices are supported by scientific evidence. We concluded that any credible validation of learning-styles-based instruction requires robust documentation of a very particular type of experimental finding with several necessary criteria. First, students must be divided into groups on the basis of their learning styles, and then students from each group must be randomly assigned to receive one of multiple instructional methods. Next, students must then sit for a final test that is

the same for all students. Finally, in order to demonstrate that optimal learning requires that students receive instruction tailored to their putative learning style, the experiment must reveal a specific type of interaction between learning style and instructional method: Students with one learning style achieve the best educational outcome when given an instructional method that differs from the instructional method producing the best outcome for students with a different learning style. In other words, the instructional method that proves most effective for students with one learning style is not the most effective method for students with a different learning style.

Our review of the literature disclosed ample evidence that children and adults will, if asked, express preferences about how they prefer information to be presented to them. There is also plentiful evidence arguing that people differ in the degree to which they have some fairly specific aptitudes for different kinds of thinking and for processing different types of information. However, we found virtually no evidence for the interaction patterns mentioned above, which was judged to be a precondition for validating the educational applications of learning styles. Although the literature on learning styles is enormous, very few studies have even used an experimental methodology capable of testing the validity of learning styles applied to education. Moreover, of those that did use an appropriate method, several found results that flatly contradict the popular matching hypothesis.

We conclude therefore, that at present, there is no adequate evidence base to justify incorporating learning-styles assessments into general educational practice. Thus, limited education resources would better be devoted to adopting other educational practices that have a strong evidence base, of which there are an increasing number. However, given the lack of methodologically sound studies of learning styles, it would be an error to conclude that all possible versions of learning styles have been tested and found wanting; many have simply not been tested at all.

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- Experiencia propia y ajena
- Intuiciones
- **Preferencias**

SABIDURÍA PRÁCTICA

- Experiencia propia y ajena
- Intuiciones
- Sesgos

The Science of Learning to Read Words: A Case for Systematic Phonics Instruction

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of New York, New York, USA*

ABSTRACT

The author reviews theory and research by Ehri and her colleagues to document how a scientific approach has been applied over the years to conduct controlled studies whose findings reveal how beginners learn to read words in and out of text. Words may be read by decoding letters into blended sounds or by predicting words from context, but the way that contributes most to reading and comprehending text is reading words automatically from memory by sight. The evidence shows that words are read from memory when graphemes are connected to phonemes. This bonds spellings of individual words to their pronunciations along with their meanings in memory. Readers must know grapheme-phoneme relations and have decoding skill to form connections, and must read words in text to associate spellings with meanings. Readers move through four developmental phases as they acquire knowledge about the alphabetic writing system and apply it to read and write words and build their sight vocabularies. Grapheme-phoneme knowledge and phonemic segmentation are key foundational skills that launch development followed subsequently by knowledge of syllabic and morphemic spelling-sound units. Findings show that when spellings attach to pronunciations and meanings in memory, they enhance memory for vocabulary words. This research underscores the importance of systematic phonics instruction that teaches students the knowledge and skills that are essential in acquiring word-reading skill.

For many years, my collaborators and I have been applying scientific procedures to carry out experiments in order to understand how beginners learn to read (Ehri, 2017). Science works by testing hypotheses, conducting controlled studies to rule out alternative explanations, and drawing conclusions based on the evidence. Multiple studies yield mounting evidence either supporting or refuting hypotheses. In the case of scientific research on learning to read, hypotheses have been derived from theories about how learning occurs. Theories have been supported or modified to accommodate the evidence. Over time, a clearer picture of how students learn to read has emerged. This article is intended to recount and illustrate with specific studies how the science of learning to read words has evolved in our laboratory, what findings of studies have shown, and how results support the importance of beginners receiving systematic phonics instruction when they learn to read. Although most of our studies have been conducted in English, we present some evidence for their relevance in other alphabetic languages.

In order to carry out studies that support inferences about cause-effect relations uncontaminated by extraneous factors, we have employed

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RESEARCH ARTICLE

Is project-based learning effective among kindergarten and elementary students? A systematic review

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Abstract

Project-based learning (PBL) is becoming widespread in many schools. However, the evidence of its effectiveness in the classroom is still limited, especially in basic education. The aim of the present study was to perform a systematic review of the empirical evidence assessing the impact of PBL on academic achievement of kindergarten and elementary students. We also examined the quality of studies, their compliance with basic prerequisites for a successful result, and their fidelity towards the key elements of PBL intervention. For this objective, we conducted a literature search in January 2020. The inclusion criteria for the review required that studies followed a pre-post design with control group and measured quantitatively the impact of PBL on content knowledge of students. The final sample included eleven articles comprising data from 722 students. The studies yielded inconclusive results, had important methodological flaws, and reported insufficient or no information about important aspects of the materials, procedure and key requirements from students and instructors to guarantee the success of PBL. Educational implications of these results are discussed.

Introduction

Over the last decade, numerous institutions have addressed the skills and dispositions that are expected to be vital for schooling in 21st century. Some of these skills are critical thinking, communication, collaboration, or creativity [1,2]. According to many experts, although the prevailing methods of direct instruction and recitation may be effective for the acquisition of factual knowledge, these skills demand new pedagogical approaches [3]. Within this context, project-based learning (PBL) and problem-based learning (PBL) have emerged as valuable inquiry approaches to achieve the so-called skills for the 21st century [4].

PjBL and PBL are usually described as active, student-centred methods of instruction that encourage students to work in collaborative groups on real-world questions or challenges to promote the acquisition of higher-order thinking skills, while teachers act as facilitators of learning [4–14]. Despite these common characteristics, PjBL and PBL also present some

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Data Availability Statement: All relevant data are reported within the paper. As the present systematic review does not include a quantitative meta-analysis, there are no additional details.

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La Comunidad de Madrid destinará más de 6,1 millones de euros a la adquisición de 36.100 tablets que se distribuirán entre los centros educativos públicos y concertados, para dar respuesta a las necesidades de educación a distancia derivadas de la crisis sanitaria provocada por el COVID-19. El Consejo de Gobierno ha conocido hoy el procedimiento de emergencia gracias al cual ha sido posible la compra de estos dispositivos.

Educational Research Review 25 (2018) 23–38

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Educational Research Review

Journal homepage: www.elsevier.com/locate/edurev

Review

Don't throw away your printed books: A meta-analysis on the effects of reading media on reading comprehension

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^cFaculty of Industrial Engineering & Management, Technion-Israel Institute of Technology, Haifa, 3200003, Israel



ARTICLE INFO	ABSTRACT
Keywords: Reading comprehension Reading media differences Digital-based reading Paper-based reading Meta-analysis	With the increasing dominance of digital reading over paper reading, gaining understanding of the effects of the medium on reading comprehension has become critical. However, results from research comparing learning outcomes across printed and digital media are mixed, making conclusions difficult to reach. In the current meta-analysis, we examined research in recent years (2000–2017), comparing the reading of comparable texts on paper and on digital devices. We included studies with between-participants ($n = 38$) and within-participants designs ($n = 16$) involving 171,055 participants. Both designs yielded the same advantage of paper over digital reading (Hedge's $g = -0.21$; $d_e = -0.21$). Analyses revealed three significant moderators: (1) time frame: the paper-based reading advantage increased in time-constrained reading compared to self-paced reading; (2) text genre: the paper-based reading advantage was consistent across studies using informational texts, or a mix of informational and narrative texts, but not on those using only narrative texts; (3) publication year: the advantage of paper-based reading increased over the years. Theoretical and educational implications are discussed.

Y entonces...

¿cómo optimizamos la toma de decisiones?

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en materia educativa qué dicen las
mejores pruebas científicas
disponibles

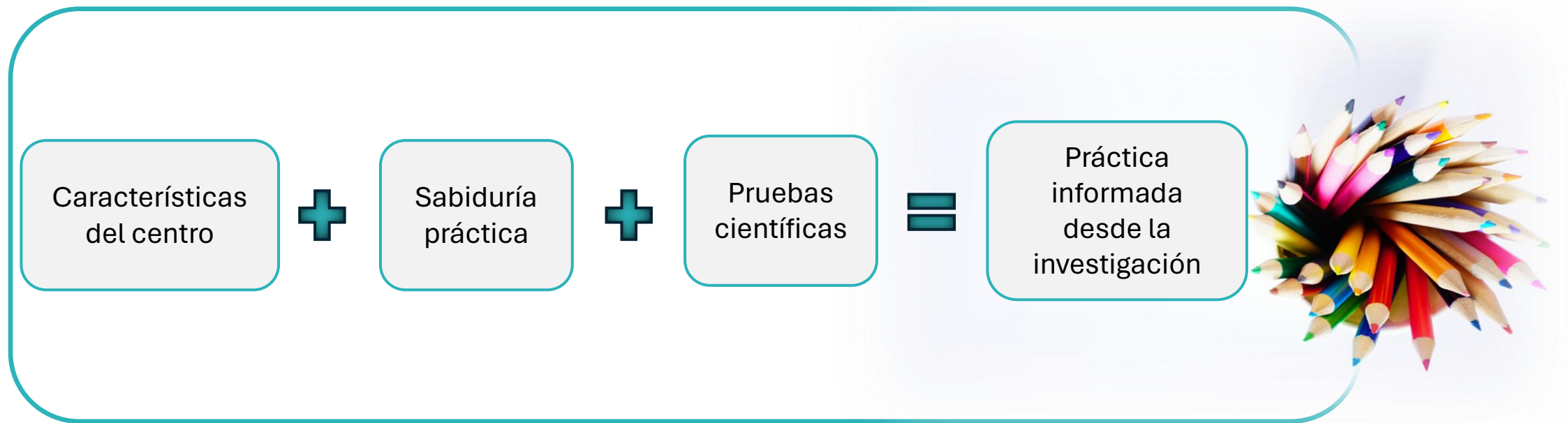
PRÁCTICA INFORMADA DESDE LA INVESTIGACIÓN

Incorporar a la toma de decisiones
en materia educativa qué dicen las
mejores pruebas científicas
disponibles.

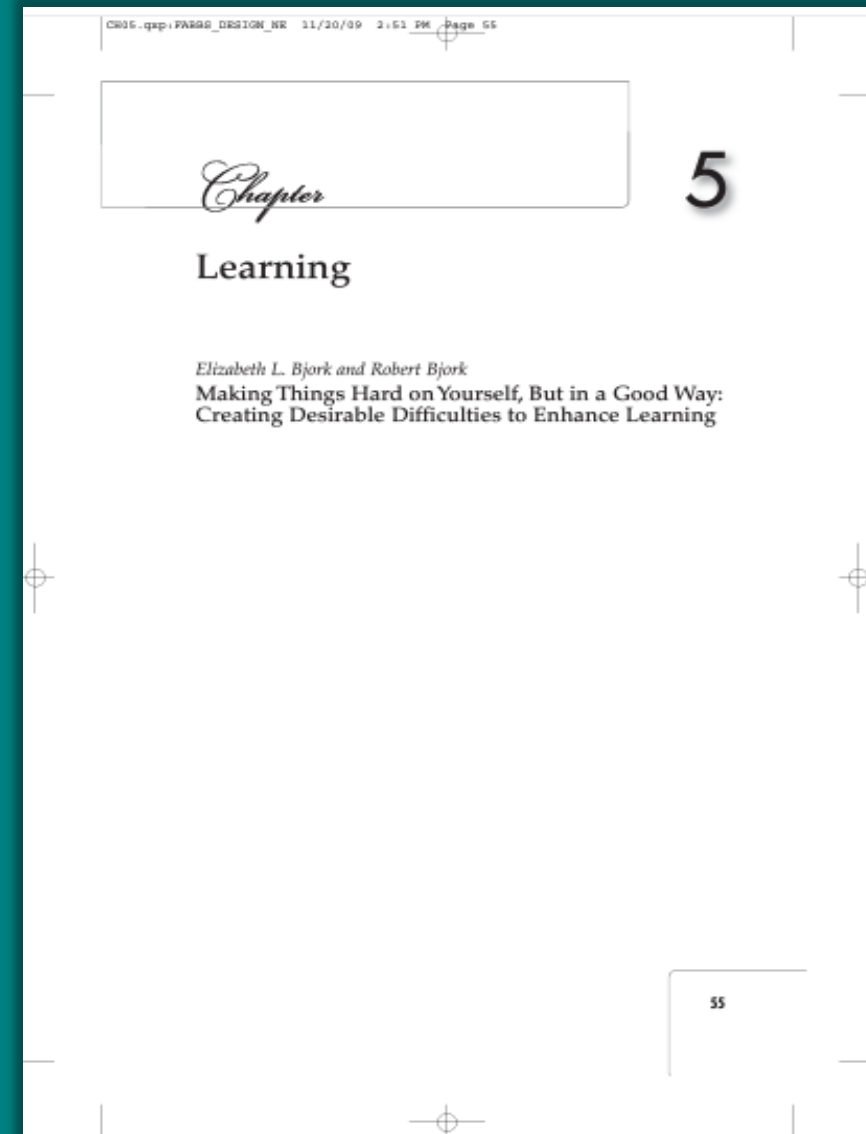
PRÁCTICA EDUCATIVA INFORMADA DESDE LA EVIDENCIA CIENTÍFICA

Incorporar a la toma de decisiones
en materia educativa qué dicen las
mejores pruebas científicas
disponibles.

PRÁCTICA EDUCATIVA INFORMADA DESDE LA INVESTIGACIÓN



Marco teórico



Información detallada y generalizable

RESEARCH ARTICLE

Is project-based learning effective among kindergarten and elementary students? A systematic review

Marta Ferrero¹, Miguel A. Vadillo^{2*}, Samuel P. León^{3*}

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* miguel.vadillo@uam.es (MAV); spaterra@ujaen.es (SPL)



Abstract

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Introduction

Over the last decade, numerous institutions have addressed the skills and dispositions that are expected to be vital for schooling in 21st century. Some of these skills are critical thinking, communication, collaboration, or creativity [1,2]. According to many experts, although the prevailing methods of direct instruction and recitation may be effective for the acquisition of factual knowledge, those skills demand new pedagogical approaches [3]. Within this context, project-based learning (PjBL) and problem-based learning (PBL) have emerged as valuable inquiry approaches to achieve the so-called skills for the 21st century [4].

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Data Availability Statement: All relevant data are reported within the paper. As the present systematic review does not include a quantitative meta-analysis, there are no additional datasets.

Autonomía profesional

What We Know and Need to Know about Literacy Interventions for Elementary Students with Reading Difficulties and Disabilities, including Dyslexia

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Kristen McMaster

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Mai W. Zaru

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ABSTRACT

The purpose of this paper is to describe what we know and what we still need to learn about literacy intervention for children who experience significant difficulties learning to read. We reviewed 14 meta-analyses and systematic reviews of experimental and quasi-experimental studies published in the last decade that examined the effects of reading and writing interventions in the elementary grades, including research focused on students with reading difficulties and disabilities, including dyslexia. We attended to moderator analyses, when available, to further refine what we know and need to learn about interventions. Findings from these reviews indicate that explicit and systematic interventions focusing on the code and meaning dimensions of reading and writing, and delivered one-to-one or in small groups, are likely to improve foundational code-based reading skills, and to a lesser extent, meaning-based skills, across elementary grade levels. Findings, at least in the upper elementary grades, indicate that some intervention features including standardized protocols, multiple components, and longer duration can yield stronger effects. And, integrating reading and writing interventions shows promise. We still need to learn more about specific instructional routines and components that provide more robust effects on students' ability to comprehend and individual differences in response to interventions. We discuss limitations of this review of reviews and suggest directions for future research to optimize implementation, particularly to understand for whom and under what conditions literacy interventions work best.

The literature addressing what we know about literacy interventions to support elementary students who experience significant difficulties learning to read is broad and deep, spanning several decades of experimental and quasi-experimental research (e.g., National Reading Panel, 2000). Despite this research base, it is concerning that only about a third of fourth graders achieve proficient reading levels (National Center for Education Statistics, U.S. Department of Education, 2019). Among students identified with a specific learning disability (SLD) only 33% perform at even a basic level (NCES, 2019). These data reflect only those students with dyslexia who have been also identified with a SLD under the Individuals with Disabilities Education Act, so it does not represent reading levels for all students with dyslexia, given that some may receive support through the Section 504 of the Rehabilitation Act (1973) and some may not have received a school-assigned dyslexia classification.

LA INVESTIGACIÓN PROPORCIONA **UNA
APUESTA MÁS SEGURA** DURANTE LA TOMA DE
DECISIONES SOBRE QUÉ HACER (Y QUÉ
DEJAR DE HACER) DENTRO DEL AULA.

—

Steve Higgins

Como comunidad, confiamos uno de nuestros recursos más preciados a los y las docentes durante la mayor parte de sus horas de vigilia, durante la mayor parte del año. El bienestar del profesorado y los resultados del alumnado dependen de que dispongan de los mejores conocimientos y herramientas disponibles, así como de la capacidad de modificar la práctica a lo largo del tiempo, a medida que evolucionan los datos de la investigación, independientemente de hasta qué punto los nuevos descubrimientos confirman o cuestionan nuestras suposiciones y creencias previas. Es una tarea difícil para todos.

Pamela Snow



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[@ferrero_mar]



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