



Effects of a video-guided active breaks program on reading comprehension in schoolchildren with special educational needs

Efectos de un programa de descansos activos sobre la comprensión lectora en escolares con necesidades educativas especiales

Authors

Alejandra Robles-Campos ¹
 Carolina Muñoz Pérez ¹
 José Guzmán Seguel ¹
 Yasna Chávez-Castillo ¹
 Irma Lagos ¹
 Lilian Castro Durán ¹
 Marcela Núñez-Solis ¹
 Ana Karina Segura ¹
 Igor Cigarroa ²
 Daniel Reyes-Molina ³
 Rafael Zapata-Lamana ³⁻¹

¹ Universidad de Concepción (Chile)

² Universidad Católica Silva Henríquez (Chile)

³ Universidad Santo Tomás (Chile)

Corresponding author:
 Rafael Zapata-Lamana
 rzapatal@santotomas.cl

Received: 14-07-25

Accepted: 09-09-25

How to cite in APA

Robles-Campos, A., Muñoz Pérez, C., Guzmán Seguel, J., Chávez-Castillo, Y., Lagos, I., Castro Durán, L., Núñez-Solis, M., Karina Segura, A., Cigarroa, I., Reyes-Molina, D., & Zapata-Lamana, R. (2025). Effects of a video-guided active breaks program on reading comprehension in schoolchildren with special educational needs. *Retos*, 71, 1288-1298. <https://doi.org/10.47197/retos.v73.117128>

Abstract

Introduction: Reading comprehension is a fundamental process in school learning; however, it is particularly challenging for students with special educational needs (SEN). In this context, video-guided active breaks emerge as an innovative pedagogical strategy that integrates movement and learning.

Objective: To evaluate the effects of a video-guided active break (AB) program, implemented through the online platform "Active Classes," on the cognitive skills involved in reading comprehension in school-aged children with special educational needs (SEN).

Methodology: A sub-analysis of a multi-center randomized controlled trial (2022–2024) was conducted in public schools in the Biobío region (Chile). 161 students aged 6 to 10 years, enrolled in the School Integration Program (Programa de Integración Escolar, PIE), with diagnoses of intellectual disability, language disorders, and autism spectrum disorder, among other conditions, participated. The study consisted of incorporating active breaks with curricular content, lasting between five and ten minutes, twice a day for twelve weeks. Reading comprehension was assessed using the Comprehensive Learning Assessment (Diagnóstico Integral del Aprendizaje, DIA) in its three dimensions: locating, interpreting, and reflecting.

Results: ANCOVA analyses, adjusted for covariates (school, gender, age, and participation in team sports), revealed significant improvements in the experimental group for "locating" ($p = 0.002$) and "reflecting" ($p < 0.001$), but not for "interpreting."

Conclusions: Video-guided active breaks could improve specific reading comprehension skills in students with special educational needs and promote inclusive education through active and accessible pedagogical strategies.

Keywords

Active breaks; educational technology; pedagogical strategies; primary education; reading comprehension; special educational needs; school inclusion.

Resumen

Introducción: La comprensión lectora constituye un proceso fundamental en el aprendizaje escolar, sin embargo resulta especialmente desafiante para estudiantes con necesidades educativas especiales (NEE). En este contexto, los descansos activos video guiados, emergen como una estrategia pedagógica innovadora que integra movimiento y aprendizaje.

Objetivo: Evaluar los efectos de un programa de descansos activos (DA) video guiados, implementado a través de la plataforma web «Clases Activas», sobre las habilidades cognitivas implicadas en la comprensión lectora de escolares con necesidades educativas especiales (NEE).

Metodología: Se realizó un subanálisis de un ensayo controlado aleatorizado multicéntrico (2022–2024), en escuelas públicas de la región del Biobío (Chile). Participaron 161 alumnos de entre 6 y 10 años, inscritos en el Programa de Integración Escolar (PIE), con diagnósticos de discapacidad intelectual, trastornos del lenguaje y trastornos del espectro autista, entre otras condiciones. El estudio consistió en incorporar descansos activos con contenido curricular de entre cinco y diez minutos de duración dos veces al día durante doce semanas. La comprensión lectora se evaluó mediante el Diagnóstico Integral del Aprendizaje (DIA), en sus tres dimensiones: localizar, interpretar y reflexionar.

Resultados: Los análisis ANCOVA, ajustados por covariables (escuela, sexo, edad y participación en deportes de equipo), revelaron mejoras significativas en el grupo experimental para «localizar» ($p = 0,002$) y «reflexionar» ($p < 0,001$), no para «interpretar».

Conclusiones: Los descansos activos guiados por vídeo podrían mejorar las habilidades específicas de comprensión lectora de los alumnos con necesidades educativas especiales, y promover la educación inclusiva mediante estrategias pedagógicas activas y accesibles.

Palabras clave

Descansos activos; tecnología educativa; estrategias pedagógicas; educación primaria; comprensión lectora; necesidades educativas especiales; inclusión escolar.



Introduction

The development of cognitive skills associated with reading comprehension is a key predictor of academic achievement and overall childhood development, according to the Comprehensive Learning Assessment implemented by the Chilean Ministry of Education (Agencia de la Calidad de la Educación, [ACE], 2017).

This skillset—which involves locating explicit information, interpreting content, and integrating prior knowledge is particularly compromised in students with special educational needs (SEN), who face systemic barriers to accessing and progressing in the school curriculum (Castillo-Retamal et al., 2021; Fierro-Saldaña, 2024). Several studies have shown that SEN students especially those diagnosed with intellectual disabilities, language disorders, or autism spectrum disorder participate less frequently in adapted educational experiences that foster cognitive development (Block, 2016; Jylänki et al., 2022).

Concurrently, existing literature demonstrates that physical activity can have substantial benefits on cognitive functions such as sustained attention, working memory, and emotional self-regulation (Kjellenberg et al., 2024; Piñera Castro & Ruiz González, 2022; Rodríguez-Maimón, 2023). A number of investigations and systematic reviews have demonstrated that brief movement-based interventions, integrated into the school day, can help improve academic performance, particularly in reading and mathematics (Castillo Cortez et al., 2024; Valentini & Gennari, 2024; Watson et al., 2017). Within this framework, active breaks (AB) defined as short periods of moderate to vigorous physical activity during the school day have emerged as a low-cost, low-risk, and highly scalable pedagogical strategy, even in resource-constrained settings (Colella et al., 2020; Kjellenberg et al., 2024). Studies have shown that active breaks with academic content lead to improvements in cognitive functions and academic performance (Jiménez-Parra et al., 2022; Pizà-Mir et al., 2022) including those related to reading comprehension processes (Javier Ninahuaman et al., 2024; Maiztegi-Kortabarria et al., 2024). Which underscores its relevance and implications for improving cognitive outcomes and informing evidence-based educational practice.

The school environment, due to its potential to reach a broad population of children, is considered an ideal setting for promoting physical activity (Aguilar-Ozejo & Mujica-Bermúdez, 2024; Martínez-López et al., 2021). Moreover, schools are equipped with infrastructure and trained professionals who can facilitate curriculum-integrated interventions (Langford et al., 2015). In this regard, a systematic review highlights that incorporating physical activity into the school day not only promotes health but also enhances the educational experience (Colella et al., 2020).

However, empirical evidence on the effects of such interventions in SEN students remains limited in primary education. This gap is particularly acute in Chile, where, according to World Health Organization benchmarks, 83% of adolescents with disabilities aged 13–17 are considered physically inactive, as reported by the National Survey on Physical Activity and Sports (Ministerio del Deporte, 2020). Furthermore, low scores across most indicators were revealed by the first National Report on Physical Activity in children and adolescents with disabilities, reflecting consistently lower participation compared to the general population (Aguilar-Farias et al., 2024). Although public policies have been promoted to reduce these disparities, their outcomes have yet to result in a sustained increase in physical activity among schoolchildren with intellectual disabilities (Marín-Suelves et al., 2023).

Given this scenario, various authors have emphasized the need to eliminate structural barriers that hinder the active participation of SEN students (Varela & Gamba, 2024)

Understanding the factors that facilitate or impede such participation is considered essential to ensuring equitable access to the benefits of physical activity (García-Hermoso, 2024). A deeper examination of these determinants can provide critical insights for developing targeted interventions and evidence-based policies aimed at reducing disparities and promoting inclusive participation. Complementarily, it has been noted that AB can be effectively implemented even in mainstream classroom settings (Huynh et al., 2024). This evidence underscores the practicality of integrating AB into standard curricula and highlights its potential to enhance both academic engagement and overall student well-being.

This study seeks to contribute to this discussion by analyzing the effects of a video-guided active breaks program, implemented via the Active Classes web platform (<https://clasesactivas.cl/>), on the cognitive skills related to reading comprehension in SEN students. Developed as part of the Active Classes Project



and applied in public schools in Chile's Biobío region, this intervention combines physical activity, educational technology, and curriculum content to foster more inclusive and effective learning.

Method

This study reports a pre-specified subanalysis described in the study protocol, focusing on schoolchildren with special educational needs (SEN) included in a randomized, controlled, multicenter trial registered at ClinicalTrials.gov (Identifier: NCT06423404). This study is part of the Active Classes Project, a research and intervention program conducted from March 2022 to October 2024. The methodology followed the CONSORT guidelines for randomized controlled trials (Butcher et al., 2008), integrating specific adaptations for social and psychological interventions (Montgomery et al., 2018), as well as the SPIRIT guidelines for clinical trial protocols (Chan et al., 2015). The full study protocol has been previously published (Zapata-Lamana et al., 2024). Ethical approval was granted by the University of Concepción (UdeC) Ethics Committee (Approval Code: CEBB 1533-2023).

Participants

The estimated target population consisted of 1,080 students, including those with and without Special Educational Needs (SEN). This study included SEN students from five public schools in the Biobío region of Chile who were formally enrolled in the School Integration Program (Programa de Integración Escolar, PIE). The Program promotes inclusive education based on internationally aligned guidelines and its aim is to ensure access, participation and progress for all students within the school system (Fierro-Saldaña, 2024).

The Chilean School Integration Program classifies SEN students into two categories: temporary SEN (Necesidades Educativas Especiales Transitorias, NEET) and permanent SEN (Necesidades Educativas Especiales Permanentes, NEEP), as defined by the Chilean Ministry of Education (Ministerio de Educación [MINEDUC], 2010). Temporary SEN (Necesidades Educativas Especiales Transitorias, NEET) is referred to as conditions for which additional educational support is required for a limited period during the school trajectory. These include attention deficit disorder, specific learning difficulties, borderline intellectual functioning, and language disorders. In contrast, permanent SEN (Necesidades Educativas Especiales Permanentes, NEEP) includes disabilities that result in long-term or lifelong barriers to learning and participation, such as autism spectrum disorder, intellectual disabilities, or hearing impairments (MINEDUC, 2010).

Participants in the study were identified with the following conditions (see Table 1):

Table 1. Classification of participants by SEN type

Temporary SEN (NEET)	Permanent SEN (NEEP)
Attention deficit disorder (12%)	Autism spectrum disorder (31%)
Specific learning difficulties (12%)	Intellectual disability (24%)
Borderline intellectual functioning (12%)	Hearing impairment (2%).
language disorder (7%).	

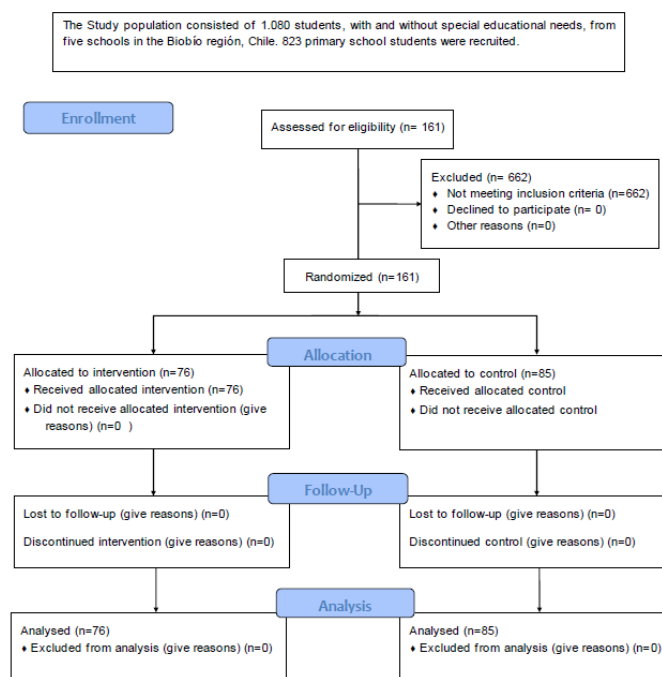
Source: Data provided by the participating schools

The invitation to participate was extended to boys and girls between the ages of 6 and 10, drawn from an estimated population of 1,080 students with and without SEN. The final sample of participants consisted of 161 students with SEN from first to fourth grade in primary education. This sample was determined using a 95% confidence level, 50% heterogeneity, and a 5% margin of error.

The results are illustrated in Figure 1.



Figure 1. CONSORT 2010 Flow diagram of participants



Source: research data

Procedure

Intervention: Active Classes Web Platform

The active breaks (AB) program was designed based on a scoping review previously conducted by the research team (Robles-Campos et al., 2023). Drawing from its findings, the duration, frequency, intensity, and curricular content of the AB were defined using video-guided formats.

An interactive web platform was developed to implement the AB (<https://clasesactivas.cl>), using modern technologies to ensure usability, maintainability, and scalability. There are three user profiles available on the platform: administrator (research team), school climate coordinator (one per institution), and teacher (responsible for designing and delivering AB sessions in the classroom). Teachers have received dedicated training to help them navigate and leverage the teacher profile effectively.

The exercise bank includes activities to improve bilateral body coordination and basic motor skills (Ruiz-Hermosa et al., 2024). These activities are guided by two animated characters created for the project to encourage students to identify with them. The exercises are designed to be performed in pairs to promote cooperation and inclusive participation. The platform also integrates a gender perspective and includes adapted resources for students with reduced mobility.

The Active Classes program was introduced for students from 1st to 4th grade, with AB sessions lasting between 5 and 10 minutes. These sessions were held twice per day, five days a week, for a duration of 12 weeks, beginning on April 29 and concluding on August 2, 2024 (excluding the winter vacation period for Chilean schoolchildren from July 24 to July 5, 2024). Sessions were delivered during core curriculum subjects (language, maths, science and English), avoiding the start and end of lessons. They were incorporated into regular lessons as a break in the routine to activate students' concentration. Each session followed three phases: a welcoming warm-up, a core activity segment, and a closing cool-down. The core content included exercises adapted for students with limited mobility. Teacher accompaniment and supervision were provided throughout to support the successful implementation of the AB sessions.

Variables and instruments

Reading comprehension skills were assessed with the Comprehensive Learning Assessment (Diagnóstico Integral del Aprendizaje, DIA), a standardized instrument developed by the Agency for Quality

Education (ACE, 2017). The DIA, available nationwide in both digital and paper formats through its official web platform (<https://diagnosticointegral.agenciaeducacion.cl/>), measures the attainment of key curriculum objectives by combining multiple-choice and open-ended questions. It demonstrates content and construct validity, is aligned with national learning standards, and has shown adequate reliability in nationwide applications ($\alpha > .80$ for reading comprehension). (ACE, 2017). The reading skill assessment evaluates comprehension as a cognitive function through three key skills: locating information, interpreting meaning and critical reflection.

1. Locating: extracting explicit information from the text for a specific purpose. This skill requires the reader to identify, discriminate against and select relevant information according to the task objective.
2. Interpreting and linking: the process of establishing connections and integrating the information contained within the text. This involves analyzing and understanding various elements in order to make inferences and build deeper meanings.
3. Reflecting: connecting the content of the text with external knowledge or personal experience in order to make critical relations about the content and form of the text.

Covariates

Sociodemographic, school-related, and family covariates were considered, obtained through self-report questionnaires previously validated within the Active Classes Chile project (Camargo et al., 2015). The variables included: gender (boys, girls), age (6 to 10 years), area of residence (urban/rural), distance to school (1–5 blocks, 6–10 blocks, 11–15 blocks, more than 15 blocks), access to nearby physical activity spaces (none, with access – such as parks, courts, gyms), school shift (morning, afternoon, full day), type of school uniform (sportswear, traditional, mixed), and parental education level (none, primary, secondary, higher education), to examine the effects of the video-guided active breaks over time and the time $\times$ group interaction on the students' language outcomes.

Data analysis

Participants' baseline characteristics were described using means and standard deviations (SD) for continuous variables, and frequencies and percentages (%) for categorical variables. To assess the effects of the video-guided active breaks program on reading comprehension, a one-way repeated-measures analysis of covariance (ANCOVA) was conducted, considering the factors of time (pretest and posttest without subsequent longitudinal follow-up), group (experimental vs. control), and their interaction (time $\times$ group). School was included as a covariate to control for clustering effects. Effect sizes were calculated using partial eta-squared (η^2p), with cut-off points of 0.02 (small), 0.13 (medium), and 0.26 (large) (Green & Salkind, 2016). Holm's correction was applied for post hoc comparisons. All analyses were conducted using JASP statistical software, with a significance level set at $p < 0.05$.

Results

Sociodemographic characteristics of the students

A total of 161 students with special educational needs were included (mean age = 7.8 ± 1.1 years; 32.3% girls), from schools in the Biobío region of Chile. Of these, 76 (47.3%) were assigned to the experimental group and 85 (52.7%) to the control group. Most students resided in urban areas (88.1%) and did not participate in extracurricular workshops (72.1%).

The results are presented in Table 2. Sociodemographic characteristics of the students.

Table 2. Sociodemographic characteristics of the students.

Variables	Total (n=161)	Experimental Group (n=76; 47.3%)	Control Group (n=85; 52.7%)
Age, M $\pm$ SD	7.8 $\pm$ 1.1	7.9 $\pm$ 1.2	7.6 $\pm$ 1.0
Gender, n (%)			
Boys	109 (67.7)	50 (65.7)	59 (69.5)
Girls	52 (32.3)	26 (34.3)	26 (30.5)
Zone, n (%)			
Urban	142 (88.2)	63 (82.8)	79 (92.9)



Rural School	19 (11.8)	13 (17.2)	6 (7.1)
1	43 (26.7)	0 (0.0)	43 (50.5)
2	42 (26.2)	0 (0.0)	42 (49.5)
3	20 (12.3)	20 (26.4)	0 (0.0)
4	31 (19.3)	31 (40.8)	0 (0.0)
5	25 (15.5)	25 (32.8)	0 (0.0)
Grade, n (%)			
1°	27 (16.8)	13 (17.1)	14 (16.4)
2°	37 (23.0)	16 (21.1)	21 (24.7)
3°	51 (31.7)	21 (27.6)	30 (35.4)
4°	46 (28.5)	26 (34.2)	20 (23.5)
After-school workshop			
Yes	45 (27.9)	24 (31.5)	21 (24.7)
No	116 (72.1)	52 (68.5)	64 (75.2)

Note: n = sample size. Mean (M) and standard deviation (SD) were used for continuous variables. Frequencies (%) were used for categorical variables.

ANCOVA analysis

A repeated-measures ANCOVA was conducted, adjusted for the covariates of school, gender, age, and participation in team sports. The results showed significant time effects on the skills of locating ($F(1,154) = 7.664$, $p = 0.007$, $\eta^2p = 0.009$) and reflecting ($F(1,154) = 22.617$, $p < 0.001$, $\eta^2p = 0.053$), indicating an overall improvement in performance following the intervention.

Additionally, significant time $\times$ group interactions were observed for both locating ($F(1,154) = 10.239$, $p = 0.002$, $\eta^2p = 0.012$) and reflecting ($F(1,154) = 28.663$, $p < 0.001$, $\eta^2p = 0.067$), demonstrating that students in the experimental group improved significantly more than their peers in the control group. The results are presented in Table 3. Descriptive statistics and ANCOVA results before and after (pretest vs. posttest) the intervention program in the experimental and control groups.

Table 3. Descriptive statistics and ANCOVA results before and after (pretest vs. posttest) the intervention program in the experimental and control groups.

Variables	Group	Pretest M $\pm$ DE	Posttest M $\pm$ DE	Time		Timex Group	
				F (p)	η^2p	F (p)	η^2p
Locating	GE	48.8	63.6	7.664 (0.007)**	0.009	10.239 (0.002)**	0.012
	(n=63)	± 28.3	± 24.9				
	GC	39.6	41.1				
	(n=71)	± 22.3	± 29.7				
Interpreting & relating	GE	46.0	58.9	1.491 (0.224)		1.325 (0.252)	
	(n=63)	± 26.3	± 20.7				
	GC	36.5	40.9				
	(n=71)	± 21.7	± 24.6				
Reflecting	GE	23.8	23.2	22.617 (<0.001)***	0.053	28.663 (<0.001)***	0.067
	(n=63)	± 36.8	± 30.8				
	GC	19.3 $\pm$ 27.4	23.2 $\pm$ 30.8				
	(n=71)						

Notes: GE = Experimental Group, GC = Control Group; η^2p = partial eta-squared; * = $p < 0.05$, ** = $p < 0.01$, *** = $p < 0.001$. Results were adjusted for the school covariate.

Discussion

This study examined the effects of a video-guided active breaks program. It focused on the cognitive reading comprehension skills of SEN students. These students were in public schools in the Biobío region of Chile. The program was implemented via the Active Classes web platform. The intervention group performed better than the control group in two out of three assessment areas: locating and reflecting. These findings suggest that incorporating video-guided active breaks into the school curriculum could positively impact the learning processes of SEN students.

Comparison with the literature

The accumulated scientific evidence supports the notion that physical activity can have a positive impact on cognitive performance and overall academic achievement during childhood.



A growing body of scientific evidence suggests that physical activity can have a positive impact on cognitive performance and overall academic achievement during childhood. Although few studies have established a direct link between physical activity and cognitive function, the available evidence emphasises the anti-inflammatory effects of physical exercise on the nervous system as a key mechanism that contributes to its protection and enhanced cognitive function (Díaz-Castro et al., 2021).

The benefits of physical activity during childhood are well documented, covering both physical and mental health (García-Hermoso, 2024). In the school context, a recent systematic review found that most in-class physical activity interventions have positive effects on cognitive and academic skills, including math, language, reading, comprehension, and executive functions (Valentini & Gennari, 2024).

These findings are consistent with the results of the present study, which revealed a significant time $\times$ group interaction in two critical dimensions of reading comprehension: locating and reflecting. In both cases, students in the experimental group, who participated in the video-guided active breaks program via the Active Classes platform, showed greater improvement than the control group. This reinforces prior evidence and highlights the potential of this specific intervention to support SEN students' learning.

Educational implications

The results of the study show that integrating active breaks with curricular content through technological platforms is an effective teaching method, especially in educational settings that serve students with special needs, fostering meaningful and experiential learning. The Active Classes platform provides a versatile, adaptable, and inclusive solution that allows teachers to seamlessly integrate structured active breaks into their lessons without disrupting the flow of instruction. Instead, these breaks enhance the learning experience by incorporating components of motor coordination, attentional regulation, and collaborative work.

This approach is a pedagogical innovation that is aligned with the principles of equity and inclusion. It facilitates the participation of all students, including those with reduced mobility, through reasonable adjustments and accessible visual guides. Furthermore, the use of a digital platform enables national scalability, with the potential to be replicated across various subjects and educational levels, thereby supporting students' holistic development.

Limitations and future directions

Despite its contributions, the study presents several limitations that should be acknowledged. First, the intervention was implemented within a geographically limited context—public schools from a single region—which restricts the generalizability of the findings. Second, significant improvements emerged in two of the three dimensions, but no effects were found for interpreting, suggesting that this skill may require more specific or longer-term interventions. Although the subanalysis included all available schoolchildren with SEN, this may have limited the possibility of conducting stratified analyses by diagnostic subgroups. Likewise, the absence of longitudinal follow-up prevents determining the sustainability of the observed effects over time. Future research should incorporate follow-up assessments to evaluate the permanence of benefits and consider gender as a covariate to explore potential differences between boys and girls.

The lack of improvement in the interpreting dimension may be related to the greater complexity of this skill. Unlike locating information or reflecting, interpreting requires the integration of prior knowledge, the ability to make inferences, and the construction of deeper meanings. It is plausible that a 12-week program may strengthen more basic processes, whereas the development of interpretive skills might require a longer intervention period or the inclusion of targeted reading comprehension strategies.

Conclusions

The effects of a video-guided active breaks program implemented through the Active Classes web platform on the cognitive skills involved in reading comprehension among students with special educational needs (SEN) in public schools in the Biobío region were evaluated in this study. The results demonstrate

that this intervention, which integrates movement, educational technology and curricular content, can significantly improve the locating and reflecting components of reading comprehension.

Integrating video-guided active breaks systematically into classrooms helps improve health and certain executive functions (Melguizo-Ibáñez et al., 2024). Moreover, it offers a promising pedagogical strategy, particularly in settings with high functional diversity. Using an accessible and flexible platform like Active Classes enables teachers to sustainably implement this approach, fostering more inclusive and equitable learning environments. The present study provides empirical support to the development of educational policies that integrate physical activity into the school curriculum— not solely as a health intervention, but also as a catalyst for cognitive and academic development.

Acknowledgements

We thank the Regional Government of Biobío, through the Innovation Fund for Competitiveness FIC-R. Finally, we thank all the people from the educational centers participating in the project.

We thank the participating schools, teachers, students, and families for their collaboration. Special thanks to the development team of the Active Classes platform for their ongoing support.

Financing

This project has been funded by Regional Government of Biobío, through the Innovation Fund for Competitiveness FIC-R code: 40046961-0.

Statement on the use of artificial intelligence: The authors declare that no generative artificial intelligence tools (such as ChatGPT or others) were used to write, analyze, interpret data, or generate content in this manuscript. All content was produced by the authors manually and directly.

References

- Agencia de la Calidad de la Educación. (2017). Recomendaciones para la aplicación de las pruebas de Evaluación Progresiva a estudiantes con NEE. https://archivos.agenciaeducacion.cl/evaluacion_progresiva/2017/web/Recomendaciones%20para%20la%20aplicacio%CC%81n%20en%20estudiantes%20con%20NEE.pdf
- Aguilar-Farias, N., Miranda-Marquez, S., Toledo-Vargas, M., Sadarangani, K. P., Ibarra-Mora, J., Martino-Fuentealba, P., Rodriguez-Rodriguez, F., Cristi-Montero, C., Henríquez, M., & Cortinez-O’Ryan, A. (2024). Results from the first para report card on physical activity for children and adolescents with disabilities in Chile. *Journal of Physical Activity and Health*, 1–9. <https://doi.org/10.1123/jpah.2024-0073>
- Aguilar-Ozejo, J., & Mujica-Bermúdez, I. (2024). Efectos del programa corporeidad para la adquisición de competencias motrices básicas en escolares de educación primaria. *Revista Ciencias de La Actividad Física*, 25(1), 1–19. <https://doi.org/10.29035/rcaf.25.1.5>
- Block, M. E. (2016). A teacher’s guide to adapted physical education including students with disabilities in sports and recreation (4th ed.). Brookes Publishing.
- Butcher, K., Sallis, J. F., Mayer, J. A., & Woodruff, S. (2008). Correlates of physical activity guideline compliance for adolescents in 100 U.S. Cities. *Journal of Adolescent Health*, 42(4), 360–368. <https://doi.org/10.1016/j.jadohealth.2007.09.025>
- Camargo, D. M., Santisteban, S., Paredes, E., Flórez, M. A., & Bueno, D. (2015). Confiabilidad de un cuestionario para medir la actividad física y los comportamientos sedentarios en niños desde preescolar hasta cuarto grado de primaria. *Biomedica*, 35(3), 347–356. <https://doi.org/10.7705/biomedica.v35i3.2502>
- Castillo Cortez, O. A., Cheza Castro, A. A., Figueroa Sacón, F. F., Revelo Gordón, V. E., & Rosas Páez, N. A. (2024). Influence of active pauses on the concentration and mathematical performance of ADHD

- students. *Revista Latinoamericana de Ciencias Sociales y Humanidades*, 5(5), 4259-4281. <https://doi.org/10.56712/latam.v5i5.2922>
- Castillo-Retamal, F., Cárcamo Garrido, B., Aravena Calderón, H., Valenzuela Zakuda, A., Pérez Farías, T., Medel Tapia, C., & Quezada Alcaino, J. (2021). Necesidades educativas especiales y educación física: un análisis desde la propuesta curricular ministerial de Chile. *Retos*, 42, 56-65. <https://recyt.fecyt.es/index.php/retos/article/view/86977>
- Chan, A.-W., Tetzlaff, J. M., Altman, D. G., Laupacis, A., Gøtzsche, P. C., Krlježa-Jerić, K., Hróbjartsson, A., Mann, H., Dickersin, K., Berlin, J. A., Dore, C. J., Parulekar, W. R., Summerskill, W. S. M., Groves, T., Schulz, K. F., Sox, H. C., Rockhold, F. W., Rennie, D., & Moher, D. (2015). Declaración SPIRIT 2013: Definición de los elementos estándares del protocolo de un ensayo clínico. *Revista Panamericana de Salud Pública*, 38(6), 506-514. <https://pmc.ncbi.nlm.nih.gov/articles/PMC5114122/>
- Colella, D., Monacis, D., & Limone, P. (2020). Active breaks and motor competencies development in primary school: A systematic review. *Advances in Physical Education*, 10(03), 233-250. <https://doi.org/10.4236/ape.2020.103020>
- Díaz-Castro, J., García-Vega, J. E., Ochoa, J. J., Puche-Juarez, M., Toledano, J. M., & Moreno-Fernández, J. (2021). Implementation of a physical activity program protocol in schoolchildren: Effects on the endocrine adipose tissue and cognitive functions. *Frontiers in Nutrition*, 8, 761213. <https://doi.org/10.3389/fnut.2021.761213>
- Fierro-Saldaña, B. (2024). Análisis del currículo de educación física en Chile: una mirada hacia la inclusión del estudiantado. *Retos*, 56, 941-948. <https://recyt.fecyt.es/index.php/retos/article/view/103946>
- García-Hermoso, A. (Ed.). (2024). Promotion of physical activity and health in the school setting. Springer Nature Switzerland. <https://doi.org/10.1007/978-3-031-65595-1>
- Green, S. B., & Salkind, N. J. (2016). *Using SPSS for Windows and Macintosh: Analyzing and understanding data* (8th ed.). Pearson.
- Huynh, N. T., Haeghele, J., James, M. E., & Arbour-Nicitopoulos, K. P. (2024). Inclusive physical activity practices for disabled children and adolescents. In A. García-Hermoso (Ed.), Promotion of physical activity and health in the school setting (pp. 359-383). Springer Nature Switzerland. https://doi.org/10.1007/978-3-031-65595-1_16
- Javier-Ninahuan, H. J., Rojas Ginche, A. E., Canchumanya Popi, J., Alderete Callupe, L., Arauzo Gallardo, C., & Quispe Santivañez, G. (2024). Descansos activos: Optimización de tiempo, grados escolares y tipos. *Revista Prâksis*, 21(1), 238-268. <https://doi.org/10.25112/rpr.v1.3504>
- Jiménez-Parra, J. F., Manzano-Sánchez, D., Camerino, O., Castañer, M., & Valero-Valenzuela, A. (2022). Enhancing physical activity in the classroom with active breaks: A mixed methods study. *Apunts. Educacion Fisica y Deportes*, 147, 84-94. [https://doi.org/10.5672/apunts.2014-0983.es.\(2022/1\).147.09](https://doi.org/10.5672/apunts.2014-0983.es.(2022/1).147.09)
- Jylänki, P., Mbay, T., Byman, A., Hakkarainen, A., Sääkslahti, A., & Aunio, P. (2022). Cognitive and academic outcomes of fundamental motor skill and physical activity interventions designed for children with special educational needs: A systematic review. *Brain Sciences*, 12(8), 1001. <https://doi.org/10.3390/brainsci12081001>
- Kjellenberg, K., Ekblom, Tarassova, O., Fernström, M., Nyberg, G., Ekblom, M. M., Helgadóttir, B., & Heiland, E. G. (2024). Short, frequent physical activity breaks improve working memory while preserving cerebral blood flow in adolescents during prolonged sitting: AbbaH teen, a randomized crossover trial. *BMC Public Health*, 24(1). <https://doi.org/10.1186/s12889-024-19306-y>
- Langford, R., Bonell, C., Jones, H., Poulou, T., Murphy, S., Waters, E., Komro, K., Gibbs, L., Magnus, D., & Campbell, R. (2015). The World Health Organization's health promoting schools framework: A Cochrane systematic review and meta-analysis. In *BMC Public Health* (Vol. 15, Issue 1). BioMed Central Ltd. <https://doi.org/10.1186/s12889-015-1360-y>
- Maiztegi-Kortabarria, J., Arribas-Galarraga, S., Luis-de Cos, I., Espoz-Lazo, S., & Valdivia-Moral, P. (2024). Effect of an active break intervention on attention, concentration, academic performance, and self-concept in compulsory secondary education. *European Journal of Investigation in Health, Psychology and Education*, 14(3), 447-462. <https://doi.org/10.3390/ejihpe14030030>
- Marín-Suelves, D., Ramón-Llin, J., & Tijeras-Iborra, A. (2023). Effects of Physical Education on students with intellectual disabilities. A systematic review. *Cultura, Ciencia y Deporte*, 18(58), 139-161. <https://doi.org/10.12800/ccd.v18i58.2021>

- Martínez-López, N., Espinoza-Silva, M., & Cárcamo-Oyarzún, J. (2021). Competencia motriz en escolares de primer y segundo año de primaria en la región de Araucanía, Chile. *Pensar En Movimiento: Revista de Ciencias Del Ejercicio y La Salud*, 19(2), e45621. <https://doi.org/10.15517/pensar-mov.v19i2.45621>
- Melguizo-Ibáñez, E., Zurita-Ortega, F., González-Valero, G., Puertas-Molero, P., Tadeu, P., Ubago-Jiménez, J. L., & Alonso-Vargas, J. M. (2024). Active break as a tool for improving attention in the educational context. A systematic review and meta-analysis. *Revista de Psicodidáctica (English Ed.)*, 29(2), 147–157. <https://doi.org/10.1016/j.psicoe.2024.02.003>
- Ministerio de Educación, Chile. (2010). Decreto 170: Fija normas para determinar los alumnos con necesidades educativas especiales que serán beneficiarios de las subvenciones para educación especial. <https://bibliotecadigital.mineduc.cl/handle/20.500.12365/17433?show=full>
- Montgomery, P., Grant, S., Mayo-Wilson, E., Macdonald, G., Michie, S., Hopewell, S., & Moher, D., on behalf of the CONSORT-SPI Group. (2018). Reporting randomised trials of social and psychological interventions: The CONSORT-SPI 2018 extension. *Trials*, 19, 407. <https://doi.org/10.1186/s13063-018-2733-1>
- Piñera Castro, H. J., & Ruiz González, L. A. (2022). Influencia de la actividad física en los procesos cognitivos. *Revista Cubana de Medicina*, 61(3), e2667. <https://www.medigraphic.com/cgi-bin/new/resumenI.cgi?IDARTICULO=119416>
- Pizà-Mir, B., Benito Colio, B., Rodríguez García, L., & González Fernández, F. T. (2022). Physical exercise based on active breaks on cognitive function and mathematical competence in undergraduate students. *Retos*, 45, 970–977. <https://doi.org/10.47197/retos.v45i0.93488>
- Ruiz-Hermosa, A., Sánchez-Oliva, D., & Sánchez-López, M. (2024). Active classrooms in school curricula and active breaks. In A. García-Hermoso (Ed.), *Promotion of physical activity and health in the school setting* (pp. 233–250). Springer. https://doi.org/10.1007/978-3-031-65595-1_10
- Robles-Campos, A., Zapata-Lamana, R., Gutiérrez, M. A., Cigarroa, I., Nazar, G., Salas-Bravo, C., Sánchez-López, M., & Reyes-Molina, D. (2023). Psychological outcomes of classroom-based physical activity interventions in children 6- to 12-year-olds: A scoping review. *Retos*, 48, 388–400. <https://doi.org/10.47197/retos.v48.96211>
- Rodríguez-Maimón, M. G. (2023). Los descansos activos: Una experiencia didáctica para su desarrollo en la enseñanza primaria [Active breaks: A teaching experience for their development in primary education]. *Retos*, 48, 784–790. <https://doi.org/10.47197/retos.v48.95725>
- Valentini, M., & Gennari, A. S. (2024). The effects of physical activity on cognitive and learning abilities in childhood. *The European Educational Researcher*, 7(1), 1–30. <https://doi.org/10.31757/euer.711>
- Varela, A., & Gamba, L. (Eds.). (2024). *Derribando barreras: Inclusión de personas con discapacidad intelectual a través del deporte y la actividad física adaptada*. Editorial Octaedro.
- Watson, A., Timperio, A., Brown, H., & Hesketh, K. D. (2017). A primary school active break programme (ACTI-BREAK): Study protocol for a pilot cluster randomised controlled trial. *Trials*, 18, 433. <https://doi.org/10.1186/s13063-017-2153-8>
- Zapata-Lamana, R., Robles-Campos, A., Reyes-Molina, D., Rojas-Bravo, J., Salcedo-Lagos, P., Chávez-Castillo, Y., Gajardo-Aguayo, J., Valdebenito-Villalobos, J., Arias, A. M., Sanhueza-Campos, C., Ibarra-Mora, J., Reyes-Amigo, T., Cristi-Montero, C., Sánchez-Oliva, D., Ruiz-Hermosa, A., Sánchez-López, M., Poblete-Valderrama, F., Celis-Morales, C., Martorell, M., Carrasco-Marín, F., Albornoz-Guerrero, J., Parra-Rizo, M. A., & Cigarroa, I. (2024). Effects of video-guided active breaks with curricular content on mental health and classroom climate in Chilean schoolchildren aged 6 to 10: Study protocol for a multicentre randomized controlled trial. *Frontiers in Physiology*, 15, 1438555. <https://doi.org/10.3389/fphys.2024.1438555>

Authors' and translators' details:

Alejandra Robles-Campos
Carolina Muñoz Pérez
Rafael Zapata-Lamana

alejandrarobles@udec.cl
caromunozp@udec.cl
rzapatal@santotomas.cl

Author
Author
Author



José Guzmán Seguel
Yasna Chávez- Castillo
Irma Lagos Herrera
Lilian Castro Durán
Marcela Núñez-Solís
Ana Karina Segura
Igor Cigarroa Cuevas
Daniel Reyes-Molina
Carolina Muñoz Pérez

josguzman@udec.cl
yasnasolchavez@udec.cl
ilagos@udec.cl
lilicastro@udec.cl
marcenun@udec.cl
anaksegura@udec.cl
icigarroac@ucsh.cl
dreyesm@udec.cl
caromunozp@udec.cl

Author
Author
Author
Author
Author
Author
Author
Translator

