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Innovations in Physical Education

Research – Best Practices – Situation



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“EP–Vivre Actif”: A Pedagogical Tool to Support the Transfer of Learning in Physical Education

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Abstract

In a context marked by decreasing levels of physical activity (PA), physical education (PE) is increasingly expected to play a pivotal role in promoting lifelong active lifestyles, notably by enabling the transfer of knowledge and skills learned in the gymnasium to students' daily lives. Although this objective is widely acknowledged, its implementation remains challenging in teaching practice. To address this issue, the digital tool “EP–Vivre Actif” was developed to support teachers in creating explicit links between learning experiences in PE and out-of-school contexts, by combining PA monitoring, pedagogical feedback and reflective activities.

This study aims to analyse the pedagogical appropriation of the tool, its use in supporting learning transfer, as well as its contributions and areas for improvement. The study adopts a qualitative approach involving 26 participants (M age = 31 years; 7 women and 19 men), including 17 pre-service PE teachers (M age = 23 years; 5 women and 12 men) and 9 in-service secondary school PE teachers (M age = 45 years; 2 women and 7 men).

The findings show that, despite being perceived as technically accessible, the pedagogical integration of the tool remains limited. Observed uses mainly correspond to delegated or incentive-based approaches, reflecting difficulties in embedding the tool within intentional teaching practices focused on transfer to everyday life. The effectiveness of the tool appears to depend less on its technical features than on the support provided to teachers in designing coherent pedagogical scenarios that explicitly foster learning transfer. These results highlight the need to jointly consider the development of digital tools and teacher education to strengthen the meaningfulness of learning in PE and to sustainably support the adoption of physically active lifestyles.

Key words: Physical Education, Mobile Application, Transfer of Learning, Physical Activity, Pedagogical Practices.

Introduction

In a context marked by a general decline in physical activity (PA), it has become essential for schools to adopt a proactive role in its promotion. Schools, where adolescents spend a substantial proportion of their time, represent a particularly favourable setting for encouraging active behaviours and fostering the adoption of physically active lifestyles (McMullen et al., 2015; Pate et al., 2006). Within this framework, physical education (PE) emerges as a central lever for PA promotion at school, as its effectiveness in encouraging active behaviours is now well established (Cale, 2023; Turcotte et al., 2023). Beyond the development of motor skills, PE lessons contribute to the establishment of a genuine culture of PA within the school environment, which may support the long-term adoption of healthy lifestyle habits.

The increasing integration of PA promotion into school curricula has profoundly transformed the role of the PE teacher. Several authors now describe PE teachers as key actors, or even the cornerstone, of this mission (Cloes, 2017; Tappe & Burgeson, 2004). As professionals specifically trained in both PA and education, PE teachers are particularly well positioned to support students in adopting physically active lifestyles over the long term (Cale, 2023). To do so, they are required to move beyond a purely technical role and act as guides, by establishing explicit links between the content taught in class and students' lived experiences, thereby enabling learners to perceive the relevance and practical applications of what they learn (Cheng et al., 2024; Iserbyt et al., 2022).

It is precisely within this capacity to build bridges between PE and everyday life that the notion of transferable skills is situated. Indeed, PE is not limited to promoting PA but also contributes to the development of so-called "life skills", that is, competencies that can be mobilised across a variety of contexts, such as communication, emotional regulation and problem-solving (Lenzen et al., 2023). For example, learning to manage effort during endurance activities allows students to develop strategies for perseverance and stress regulation that can be reinvested in academic examinations or in extra-school situations involving pressure, such as job interviews or sporting competitions. From this perspective, Parlebas and Dugas (2005) refer to a "transfer reinvested in everyday life", while Cloes (2017) introduces the concept of "societal anchoring", defined as "any knowledge or competence provided by PE lessons that students can use in their everyday lives throughout their lifetime" (p. 9). However, the effective realisation of such transfer cannot be left to chance. It requires explicit pedagogical intention and rigorous structuring of learning situations. To enable students to appropriate these societal anchors and mobilise them in their daily lives, teachers must design lessons that go beyond the acquisition of discipline-specific skills, anticipating and fostering their reinvestment in other contexts. An explicit pedagogical approach, combining authentic learning situations with progressive guidance, therefore appears essential to help students establish these links and integrate them sustainably into their lifestyles (Beaudoin, 1998).

In practice, however, the implementation of these pedagogical intentions encounters numerous contextual constraints (Jastrow et al., 2022). PE teachers report difficulties in moving beyond the boundaries of the lesson to establish concrete links between school-based learning and students' everyday lives, even though the importance of such transfer is widely recognised (Cloes & Pire, 2021). This gap between curricular ambitions and actual teaching practices highlights the need for tools capable of supporting teachers in this mission, by structuring and making visible the societal anchors targeted by PE lessons.

From this perspective, the growing development of digital tools appears to offer promising opportunities (Sönmez et al., 2018). Rather than replacing teachers, these technologies can function as pedagogical mediators, facilitating continuity between learning situations experienced in class and behaviours adopted outside school, while also enabling learning to be extended across time and space (Fulantelli et al., 2015; Reddy & Sharma, 2018). However, few digital tools are currently designed specifically for PE and explicitly aimed at supporting the transfer of learning to everyday life (Gil-Espinoza et al., 2022).

It is precisely in response to this gap that the digital tool “EP–Vivre Actif” was developed. Designed as a mobile application intended for integration into upper secondary school PE lessons, this tool aims to support teachers in their role as mediators between classroom learning and students’ everyday lives, while also fostering students’ autonomy in managing their PA. By combining PA monitoring, pedagogical content, feedback mechanisms, reflective activities and interactions between teachers and students, the application seeks to operationalise learning transfer processes and embed the promotion of an active lifestyle within an educational continuity extending beyond the school context. Nevertheless, the capacity of a tool such as “EP–Vivre Actif” to foster learning transfer cannot be considered intrinsic to the technology itself. Rather, it depends closely on the pedagogical uses developed by teachers, the ways in which the tool is integrated into learning progressions, and teachers’ ability to connect it with students’ experiences outside school. In other words, digital technology does not constitute an automatic lever for transfer, but rather a mediator whose effectiveness relies on the intentions, competencies and practices of those who use it (Amadiou & Tricot, 2020; Depover et al., 2007).

Objectives

This study aims to analyse how the “EP–Vivre Actif” tool is pedagogically appropriated by participants, how it is used to support the transfer of learning to students’ everyday lives, as well as its contributions and areas for improvement within the context of its pedagogical implementation.

Methodology

This section describes the “EP–Vivre Actif” tool, the study population, the research protocol and the data analysis methods.

“EP–Vivre Actif” Tool

The “EP–Vivre Actif” tool consists of a mobile application designed for students and a dedicated website for teachers. The application includes several complementary sections: a PA logbook, educational quizzes and an evolving avatar, all intended to support student engagement and the monitoring of PA (figure 1).

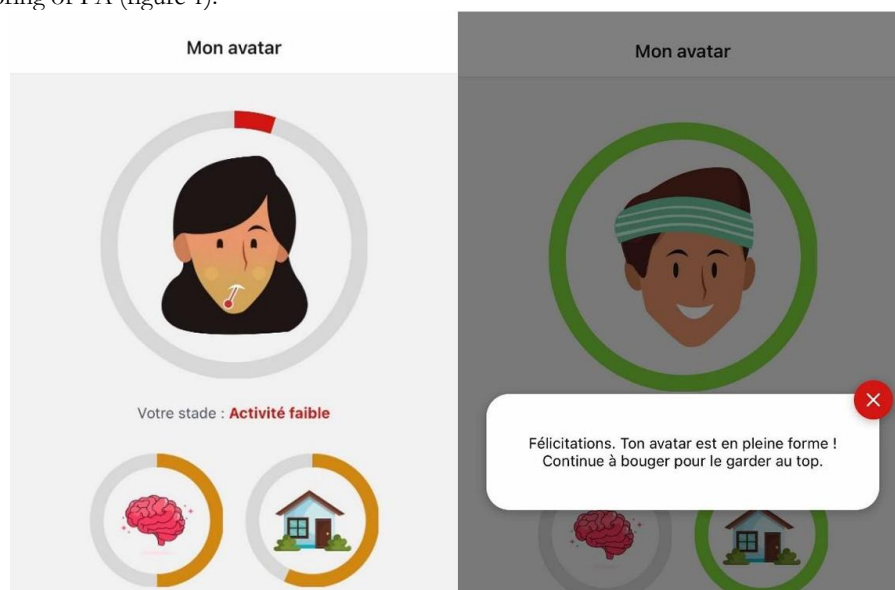


Figure 1. Example of the evolving avatar used in the “EP–Vivre Actif” application to support student engagement.

However, the pedagogical core of the device lies in the “*PE Lesson*” section, which explicitly aims to strengthen the link between PE lessons and students’ everyday lives. Within this section, students record each PE lesson by indicating the date and the teacher, allowing their responses to be linked to the teacher platform. They then evaluate their experience using graduated emojis across several dimensions: perceived competence, enjoyment, motor engagement, social interactions, learning and autonomy. In addition, open-ended questions invite students to articulate what they have learned and to reflect on how these learning outcomes can be reinvested in their everyday lives, thereby reinforcing the reflective dimension and the transfer potential of the tool. Such opportunities also provide a medium through which students’ voices can be expressed and valued (Howley, 2022).

The teacher website allows teachers, with students’ consent, to access data generated through the “*PE Lesson*” section. Organised by class and by student, these data provide teachers with structured feedback on students’ perceptions, engagement and understanding of lesson content, as well as on the links they establish with their everyday lives. The website thus serves as a pedagogical monitoring and regulation tool, facilitating the adjustment of teaching practices to support learning transfer and promote an active lifestyle. The information provided by students can help teachers refine their strategies, thereby improving instruction and more effectively supporting learning.

Participants

The study was conducted with two groups of participants: a sample of 17 final-year pre-service PE teachers enrolled at the University of Liège (5 women and 12 men), and 9 in-service PE teachers working within the French-speaking Community of Belgium (2 women and 7 men).

Study Design and Procedure

The study was conducted in three phases (preparation, implementation, and analysis) at the beginning of the 2024–2025 school year, a period considered favourable for introducing new pedagogical approaches (Marsollier, 2002). The preparatory phase took place in September 2024, followed by an implementation phase conducted from September to December 2024. The post-implementation analysis and reflective feedback phase was carried out between January and February 2025.

The preparatory phase aimed to engage practitioners in collective reflection on the links between PE lessons, students’ everyday lives and the integration of the “*EP–Vivre Actif*” tool. Following an initial data collection through a questionnaire, participants were introduced to the concept of societal anchoring (Cloes, 2017), which served as the theoretical framework for structuring the transfer of learning from PE lessons to everyday life. Participants then worked in sub-groups using the jigsaw classroom method (Aronson et al., 1978) to identify, across different types of physical activities (team sports, physical conditioning, individual sports and expressive activities), transferable content and pedagogical approaches likely to support transfer. The “*EP–Vivre Actif*” tool (mobile application and teacher website) was subsequently presented, together with user guides. Finally, participants collaboratively developed modalities for integrating the tool using the nominal group technique (Bourrée et al., 2008; Delbecq & Van de Ven, 1971), resulting in a set of recommendations validated and enriched by the participants. This phase concluded with a post-phase questionnaire.

The implementation phase allowed practitioners to experiment with the tool in their classes for at least six weeks, in accordance with ethical procedures and the General Data Protection Regulation, with informed consent obtained from students, parents, and school administrations, and approval granted by the Hospital–Faculty Ethics Committee of the University of Liège (2024/321).

Following the implementation phase, individual interviews were conducted to analyse how practitioners appropriated the tool, as well as the facilitators and barriers to its pedagogical integration. A subsequent reflective feedback phase enabled the evaluation of the recommendations implemented and the

identification of adjustments required to ensure the sustainability of the tool within the school context.

Data Collection and Analysis

Data were collected using a qualitative approach structured in three phases. During the preparatory phase, an initial questionnaire and collective discussions were used to establish an overview of teaching practices, digital tool usage and representations of the relationship between PE and everyday life. During the implementation phase, participants kept a logbook and took part in mid-intervention semi-structured interviews aimed at documenting their use of the tool and the pedagogical adjustments made throughout the intervention. Finally, during the post-implementation phase, individual interviews were conducted to analyse actual practices, perceptions and perceived effects.

The data were analysed using content analysis. Closed-ended questionnaire data were first organised using predefined descriptive categories (e.g., gender, Likert-scale responses, frequency of use). Qualitative data collected through interviews, collective discussions and logbooks were then analysed using an inductive thematic coding procedure. Initial themes were identified from recurring patterns in participants' discourse and progressively refined into analytical categories throughout the coding process. In some cases, deductive categories derived from the theoretical framework on learning transfer were also mobilised to support interpretation.

For the analysis of transfer practices, participants' practices were classified according to the extent to which links between PE lesson content and students' everyday lives were made explicit, intentional and recurrent. Practices were coded as "*no explicit transfer*" when no connection to everyday life was observed or reported, as "*weak or implicit transfer*" when such links remained occasional or indirect, and as "*explicit transfer*" when teachers deliberately and repeatedly connected PE content to everyday-life situations through explanations, reflection activities or home-based tasks.

Coding was conducted independently by two analysts before comparison and discussion of discrepancies until consensus was reached. Inter-analyst reliability was initially insufficient ($\kappa = 0.57$) but reached a high level following refinement of the coding process ($\kappa = 0.83$), in accordance with the criteria proposed by Landis and Koch (1977).

Results

In line with the research objectives, the results presented in this article focus on participants' appropriation of the tool and on how it was used to support the transfer of learning from PE lessons to students' everyday lives.

Of the 26 participants involved in the preparatory phase, 11 of the 17 pre-service teachers (5 women and 6 men) and 3 of the 9 in-service teachers (1 woman and 2 men) used the tool for at least six weeks. The intervention was conducted in Belgian secondary education settings with students aged approximately 15 to 18 years old (equivalent to Grades 10 to 12). Among the pre-service teachers, the tool was implemented across 11 classes, including seven girls-only classes and four boys-only classes. Among the in-service teachers, the intervention involved three classes, including two girls-only classes and one boys-only class. The participating classes were drawn from both general secondary education and vocationally oriented secondary education. Teachers were free to choose the classes involved in the project, generally selecting groups perceived as sufficiently engaged in PE participation while including students with diverse sporting backgrounds and levels of physical activity.

Overall, 12 participants (46.2%) withdrew from the study. Among pre-service teachers, the main reasons for non-implementation were a preference to focus on their teaching placement due to a lack of confidence ($n = 4$), reluctance from a supervising teacher ($n = 1$), and restrictions on mobile phone use within the school ($n = 1$). Among in-service teachers, one participant reported difficulties related to a

lack of time, two did not respond to follow-up requests after the preparatory phase, and three chose not to engage with the project, citing a perceived lack of added value for student learning.

Appropriation of the “EP – Vivre Actif” Tool

To synthesise the diversity of digital tool integration during the intervention, participants’ practices were grouped into appropriation profiles, based on pedagogical guidance, usage frequency, and degree of integration in PE lessons. Table 1 shows three distinct profiles reflecting the dominant usage patterns.

Table 1. Pedagogical appropriation profiles of the digital tool (n = 14)

Profile	Pedagogical practice	n
Guided use	Tool integrated into lessons with explicit teacher guidance	4
Incentive-based use	Tool encouraged through reminders, without in-class integration	3
Delegated use	Tool use left to students’ initiative	7

The analysis of the digital tool’s integration modalities made it possible to identify three appropriation profiles. A first group of teachers (n = 4) adopted a guided use, characterised by a structured presentation of the application and by time explicitly dedicated to its use during lessons. A second profile (n = 3) corresponds to an incentive-based use, relying mainly on reminders addressed to students, without the tool being systematically integrated into pedagogical work. Finally, a third profile (n = 7) refers to a delegated use, in which teachers allow students to use the application autonomously, without specific instructions or follow-up.

Transfer Between PE Lessons and Everyday Life

With regard to the central objective of the project, namely providing a tool that allows students to express their perceptions of PE lessons, establish links between school-based learning and everyday life, and assess both their understanding and capacity for reinvestment, several findings can be identified. Analysis of the data collected from the 14 participants reveals an overall low level of integration of such links within teaching practices. Indeed, half of the participants (n = 7) did not implement any explicit transfer, prioritising lesson management or motor practice during the session over contextualising learning.

Three participants used weak or implicit transfer practices, limiting students’ ability to connect school learning with real-life situations. In contrast, four participants adopted more explicit approaches, creating recurrent links between lessons. Strength training and endurance were the most conducive contexts for everyday learning, through explained warm-ups, home exercises, and personalised programmes fostering self-management. Team sports, however, posed greater challenges, with fewer connections to extra-school applications.

When asked about their use of the digital tool to collect students’ feedback and assess the reception of pedagogical messages, 12 participants reported never having accessed the platform, explaining that they had “forgotten” to do so. Two participants accessed it out of curiosity, while only one used it systematically to analyse students’ perceptions and adjust teaching practices accordingly.

Strengths and Areas for Improvement of the Tool

The evaluation of the “EP–Vivre Actif” tool, conducted using the model proposed by Tricot et al. (2003), highlights a marked contrast between its ease of use and its perceived pedagogical value. All participants agreed that the tool is intuitive and accessible, and that it is appropriate for use at the upper

secondary education level. However, perceptions diverged regarding its pedagogical value: seven participants felt that, in its current form, the tool fails to achieve its objectives, particularly due to limited student motivation, while the other seven saw it as a useful means of collecting feedback and monitoring students' PA. This divergence should nevertheless be interpreted with caution, as these judgements often stemmed from partial or superficial use of the tool.

Participants subsequently identified both the main strengths of the tool and the developments considered necessary to enhance its pedagogical potential (Table 2).

Table 2. Participants' Perceptions of the Pedagogical Strengths and Limitations of the "EP-Vivre Actif" Tool

Dimension	Identified element	N
Strengths	Access to students' perceptions and feelings	9
	Individualised monitoring of PA	5
	Gamification (challenges, rewards, games)	8
Areas for improvement	Customisable quizzes	5
	Access to real PA data	2
	Notification system	2

Taken together, these results indicate that, while the tool is primarily perceived as a relevant support for feedback and monitoring, its pedagogical potential remains contingent upon the integration of features that foster student engagement and enable the effective use of data by participants.

Discussion

This study aimed to analyse the appropriation of the digital tool "EP-Vivre Actif", its use to support the transfer of learning to everyday life, as well as its contributions and areas for improvement. The findings reveal a marked gap between the perceived potential of the tool and the ways in which it is used in practice. While the tool is unanimously regarded as easy to use and well suited to the context of upper secondary education, it is rarely mobilised in a structured manner to support learning transfer and monitoring. Three hypotheses may be put forward to explain this discrepancy.

Transfer to Everyday Life: A Secondary Objective in Teaching Practices

Despite the evolution of institutional and scientific discourse advocating an expanded role for PE teachers that increasingly incorporates health-related dimensions and active lifestyles, the findings indicate that, in practice, the transfer of learning to everyday life remains a secondary objective for the majority of participants. This tendency may be partly explained by the fact that teachers' pedagogical choices continue to be strongly influenced by their personal sporting background and initial professional socialisation, which have traditionally emphasised performance, technical mastery, and sport practice within the school context (Cloes & Pire, 2021). The results also suggest that most PE teachers experience difficulties in identifying the relevance of what they teach for students' everyday lives. Such limited awareness tends to keep them within their comfort zone, which is hardly conducive to changing their practices or adopting new tools. This mismatch between the objectives of the digital tool and teachers' actual pedagogical intentions helps to explain the limited level of investment observed. When the aims of a tool do not align with either the curricular priorities perceived as central or teachers' professional frames of reference, its adoption in the school context is inevitably constrained. These findings thus confirm the importance of close alignment between the objectives of digital tools, institutional curricula, and teachers' pedagogical conceptions in order to foster their effective integration into teaching practices (Lee & Gao, 2020; Sensevy, 2006). In this respect, the "EP-Vivre Actif" tool appears consistent with several contemporary orientations of PE curricula, particularly

those related to health promotion, student autonomy and the transfer of learning beyond the school context.

Insufficient Student Engagement Supported by the Tool

The areas for improvement identified by participants highlight a second major explanatory factor: the insufficient integration of motivational mechanisms within the tool. Recurrent requests for gamification features, quizzes and notification systems suggest that, in its current form, the application fails to foster sufficiently sustained student engagement. The literature indicates that the effectiveness of digital educational tools largely depends on learners' active and regular participation, which is a necessary condition for the generation of meaningful data and for pedagogical adjustment (Deterding et al., 2011).

In the absence of mechanisms designed to promote engagement, the tool tends to be used infrequently, thereby reducing both the quantity and quality of information available to participants and limiting its perceived pedagogical value (Koivisto & Hamari, 2019). This lack of engagement subsequently fuels a vicious circle: the less students use the tool, the fewer usable data are available to teachers, and the fewer incentives they have to integrate it into their teaching practices. In this context, the challenge does not lie in transforming the tool into a purely playful device disconnected from its educational objectives, but rather in striking a balance between attractiveness and pedagogical intention. Features that support intrinsic motivation, such as collaborative peer challenges or mechanisms highlighting progress, could enhance student engagement while simultaneously supporting health-related goals and the transfer of learning to everyday life (Australian Sports, 2019; Martel et al., 2011).

A Deficit in Pedagogical Appropriation and Tool-Related Training

Finally, the appropriation profiles identified reveal a third determining factor: a deficit in the pedagogical appropriation of the tool. Indeed, the majority of participants adopted either a delegated use or an incentive-based use, two modalities characterised by the absence of explicit and structured integration of the tool within teaching sessions. This predominance of weakly integrated practices suggests that, despite the technical simplicity of the tool, participants do not always possess the pedagogical reference points required to embed it within a coherent and intentional instructional design, as highlighted by the TPACK model (Mishra & Koehler, 2006).

This deficit in pedagogical appropriation may be explained by a preparatory phase that was insufficiently oriented towards the operationalisation of the tool in authentic teaching contexts. The literature on continuous professional development in PE recommends strengthening teachers' knowledge in clear and practical ways, notably by providing concrete examples of how the tool can be implemented across diverse lessons (AIESEP, 2009). Such an approach would allow teachers to perceive its use as both feasible and pedagogically valuable in practice, thereby promoting its effective appropriation and integration into teaching practices (Delforge et al., 2022; Fernández-Batanero et al., 2020; Rasmy & Karsenti, 2016).

Conclusion and Perspectives

This study aimed to analyse participants' appropriation of the "EP-Vivre Actif" tool, its use in supporting the transfer of learning to students' everyday lives, as well as its contributions and areas for improvement within the context of its pedagogical implementation. In this regard, the findings show that, despite the tool being technically accessible, its integration remains largely limited to delegated or incentive-based uses, revealing a deficit in pedagogical appropriation. These results highlight that the simplicity of a tool is not sufficient to ensure its integration into structured and intentional teaching practices.

Beyond the intrinsic characteristics of the tool, pedagogical appropriation thus emerges as a central

issue. It is closely dependent on teachers' ability to integrate the tool into coherent instructional scenarios and to use it as a genuine mediator of learning. From this perspective, the implications of this study call not only for continued improvement of the tool in order to strengthen its pedagogical potential, but above all for the development of support mechanisms that are more closely connected to classroom practices.

Finally, this research highlights the need to support teachers in strengthening their capacity to connect learning content taught in PE with students' everyday life situations. Such articulation appears essential not only for enhancing the meaningfulness of learning, but also for reinforcing the educational role of PE in promoting sustainable and physically active lifestyles beyond the school context. In this respect, the "EP-Vivre Actif" tool aligns with several contemporary orientations of PE curricula and educational learning outcomes, particularly those related to student autonomy, reflective engagement, health promotion and the transfer of learning into everyday life. However, the findings also suggest that achieving these objectives requires more than the provision of a digital tool alone, calling instead for sustained pedagogical support and stronger integration into teachers' instructional practices.

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