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Educational Research on the Use of Virtual Reality Combined with a Practice Teaching Style in Physical Education: A Qualitative Study from the Perspective of Researchers

Daniel Bores-García [1], Roberto Cano-de-la-Cuerda [1,2,*], María Espada [1], Nuria Romero-Parra [1,3], Diego Fernández-Vázquez [1,2], José Manuel Delfa-De-La-Morena [1], Víctor Navarro-López [1,2] and Domingo Palacios-Ceña [1,4]

[1] Department of Physiotherapy, Occupational Therapy, Rehabilitation and Physical Medicine, Faculty of Health Sciences, Universidad Rey Juan Carlos, 28922 Madrid, Spain; daniel.bores@urjc.es (D.B.-G.); maria.espada@urjc.es (M.E.); nuria.romero@urjc.es (N.R.-P.); diego.fernandez@urjc.es (D.F.-V.); jose.delfa@urjc.es (J.M.D.-D.-L.-M.); victor.navarro@urjc.es (V.N.-L.); domingo.palacios@urjc.es (D.P.-C.)

[2] Movement Analysis, Biomechanics, Ergonomics, and Motor Control Laboratory, Faculty of Health Sciences, Universidad Rey Juan Carlos, 28922 Madrid, Spain

[3] LFE Research Group, Department of Health and Human Performance, Faculty of Physical Activity and Sports Science, Universidad Politécnica de Madrid, 28040, Madrid, Spain

[4] Research Group of Humanities and Qualitative Research in Health Science of Universidad Rey Juan Carlos (Hum&QRinHS), Department of Physical Therapy, Occupational Therapy, Rehabilitation and Physical Medicine, Universidad Rey Juan Carlos, 28922 Madrid, Spain

* Correspondence: roberto.cano@urjc.es

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Abstract: (1) Background: the scientific literature has shown that students' active involvement in the teaching–learning process significantly improves their learning outcomes. (2) Methods: this study shows the perceptions of seven researchers on the process of inquiring about the effects of the combined use of virtual reality (VR) and a practice teaching style in physical education in secondary educational institutions. (3) Results: the results obtained from the researchers' diaries and the focus group, through qualitative design, are arranged in the following categories: difficulties in data collection before, during, and after the intervention; perceived differences between VR interventions in laboratory situations and educational contexts; and the perceived transferability of the use of VR devices in the educational context. (4) Conclusions: more research is needed on the use of VR in the educational context, although the results obtained indicate that the teaching–learning process can be enriched by overcoming the difficulties inherent to the use of this technology in a variable context such as education.

Keywords: virtual reality; teaching methods; educational research; qualitative design; physical education; secondary education; technology

1. Introduction

Education is a changing field that is constantly being questioned. One of the main objects of study within this field is to improve the teaching methods that teachers can apply in their classes to improve students' learning. At the same time, we are witnessing a technological development in all areas. All this makes it of great interest for the educational community to investigate the application of technology through different teaching methods. This research usually reflects results focused on academic performance, motivation, and the satisfaction of students and teachers. However, this type of research usually developed in a changing context such as the educational center, with pioneering technology such as virtual reality (VR), can lead to different problems and difficulties for researchers themselves. For this reason, this article aimed to focus on researchers, analyzing and describing their perception when developing educational research and applying new technology in this field. The aim is to shed light on the development and implementation of research in the educational field so that it can be taken into account in future research.

1.1. The Spectrum of Teaching Styles

In the field of physical education (PE), one of the most important contributions to the pedagogical basis has been the Spectrum of Teaching Styles created by Muska Mosston in 1966. These teaching styles are essential for the development of the classes, facilitating the achievement of educational objectives and the development of tasks, which allows for an increase in the interest and motivation of students towards the subject [1].

The Spectrum of Teaching Styles stems from the premise that teaching is a chain of decision-making [2]. These decisions can be divided into three categories. The first set refers to decisions that occur before contact between teacher and student. They are called pre-impact decisions and refer to decisions related to design and planning. The second set covers the decisions made during the intervention, when the teacher and students are face to face, and this is the moment when the pre-impact decisions are put into practice. The third set is post-impact decisions, which are related to assessments during student practice time [2,3].

Eleven landmark styles can be identified in the Spectrum of Teaching Styles. These teaching styles can be seen to represent the two basic human thinking capacities: reproduction thinking and production thinking [4]. According to the Spectrum theory, no teaching style is better or worse than another [3] because, as teachers move along the eleven styles of the Spectrum, their level of decision-making changes accordingly. For example, in the command style (A), the teacher makes all the decisions. On the contrary, in the self-teaching style (K), the learner makes all the decisions [5]. According to Mosston and Ashworth [2], there are two clusters: reproductive clusters and productive clusters. The reproductive styles are where the teacher presents a model or demonstration and encourages the learner to replicate it. These styles are command (Style A), practice (Style B), reciprocal (Style C), self-check (Style D), and inclusion (Style E). In the other cluster, i.e., production styles, the teacher presents a problem, and students produce new knowledge to solve it. They are guided discovery (Styles F), convergent discovery (Style G), divergent discovery (Style H), learner-designed individual program (Style I), learner-initiated style (Style J), and self-teaching (Style K) [2,6].

Within the reproduction cluster, command and practice styles are identified as the styles most frequently used in PE [3,7,8]. As indicated by Byra et al. [3], these two styles represent teacher-centered approaches. In this sense, the preference to use these more teacher-centered teaching styles is due to the perceived better management of time in a more effective manner, and the knowledge necessary for student learning to occur [9].

1.2. Practice Style

Practice style or Style B is the first style on the Spectrum that involves the learner in making some concrete decisions during the teaching–learning process, concretely impacting the decisions set, which is shifted from the teacher to the learner [2]. These decisions are related to the learner's performance, for example, where to be in space, how quickly or intensively to perform the task, when to start and stop a task, when to move to another task, and when to ask the teacher something regarding the task. During task practice, the teacher offers the students individual feedback to help them reproduce the modeled movement [3]. The main objective of this style is to develop students' awareness of time in making decisions and the importance of time in task acquisition for themselves and others [2].

1.3. Virtual Reality

In this regard, the scientific literature has shown that students' active involvement in the teaching–learning process significantly improves their learning outcomes [10,11], and, accordingly, the educational community has recently developed and implemented new methodologies and tools to increase motivation and engagement in student learning [12], including technology as a potential key element in the process since technology-based pedagogies contribute to "edutainment" environments where education is provided by leveraging the advantages of games, and students' active engagement are more likely to occur, allowing them to learn while having fun [13].

VR, mixed reality (MR), and augmented reality (AR) are all part of "extended reality". All of them have been introduced into different areas of education and have been rapidly adopted for different purposes [14]. VR and interactive video gaming (exergames) have been defined as the simulation of the real world created by a computer system, allowing one to feel immersed and to interact with objects and experience tasks and functions in that virtual environment [15–17]. AR incorporates virtual objects into real environments, enriching this real content using technological devices (i.e., smartphones or tablets) for the interaction [18]. Finally, MR is described as an environment that combines the interaction between the real environment that was mapped previously with virtual objects. Immersion and interaction are the main concepts related to VR [6]. Immersion is defined as the user's perception that he/she is in a virtual environment and is related to the design of the software and hardware, with different levels of immersion (immersive, semi-immersive, and non-immersive systems). On the other hand, interaction with the virtual environment can be performed through other devices (i.e., globes, mouses, or joysticks) [19], providing several levels of sensations and feedback.

1.4. Virtual Reality in Education

The number of studies using VR in educational environments is on the rise [8]. Educational institutions such as schools, universities, etc. are adopting VR as an educational and practicing tool, as it can be used in the teaching–learning process. VR enables active learning, involving students in tasks as they work their attention and participation by performing them, while teachers can encourage them to use more of their senses to participate in learning activities. It is important to notice that by using VR, students can learn on-site training in a controlled environment, promoting curiosity, ease, and safety [18].

VR provides several advantages and benefits in education. They are (1) to explore problem spaces and test solutions without risks at whichever location, (2) to inspire creativity and imagination, and (3) to motivate students to perform physical tasks and promote cognitive and motor skills [18]. In the concrete issue of using VR for PE, VR could facilitate the generation of movement and sensory–motor skills, functional activities, and facilitating motor learning [19–21]. In this context, Buentello-Montoya et al. [22] highlighted the importance of having an adequate pedagogical design before implementing VR.

However, despite the aforementioned advantages of the application of VR in educational contexts, no previous study from the literature has evaluated and/or examined the arising difficulties or challenges that researchers and teachers face when conducting research using this technology and whether real differences can be observed between controlled or real conditions. Therefore, several questions need to be clarified: (a) What difficulties or challenges arise when evaluating the application of VR in educational contexts? (b) Are there differences when applying VR in controlled conditions and/or in real educational contexts? (c) Could VR devices be used in the context of physical education? Therefore, this study aimed to describe and explore the use and application of VR in an educational context, especially while teaching PE lessons.

2. Materials and Methods

The present qualitative research was part of a mixed-method intervention design measuring the effects of 50 min sessions of PE for six weeks, using VR and a gamified program, on motivation and satisfaction with PE, motor skills, and perceived health.

2.1. Design

A qualitative, descriptive, and exploratory study based on an interpretative framework was conducted [23–25], following the Consolidated Criteria for Reporting Qualitative Research (COREQ) [26], which includes a checklist to be considered when conducting interviews and focus groups, and Journal Article Reporting Standards for Qualitative Research, which presents certain recommendations for writing reports based on qualitative or mixed research designs (JARS-Qual Working Group) [27]. The goal of an explorative, descriptive, qualitative study is to identify a situation or an event. These designs are used to show "what is happening" and "how is it happening" [28,29] and to present a comprehensive summary of events in everyday terms [29]. Thus, qualitative descriptive studies are considered the method of choice when straight descriptions of phenomena are desired [28]. Moreover, the goal of qualitative research inquiry is to understand how people respond and understand the meaning of a social phenomenon [25,30]. This qualitative methodology was selected, as the aim of the study was to gain insight into the perceptions of researchers involved in research in the educational context using VR.

2.2. Research Team and Reflexivity

The research team consisted of up to 7 researchers. The professional profile was three graduates in Physiotherapy and Doctors (PhD) in Health Sciences with previous experience in the use of VR in healthcare and laboratory contexts and four Doctors (PhD) in Physical Activity and Sports Sciences.

2.3. Context

The intervention consisted of two weekly 50 min sessions of PE for six weeks where participants were allocated to different educational experiences such as the practice teaching style (n = 14), gamified practice teaching style (n = 32), and VR + gamified practice teaching style (n = 29).

VR training consisted of video-game-based training with commercial video games using the Xbox One video game console and the Kinect (Microsoft Inc., Redmond, WA, USA) device, the Nintendo Switch (Nintendo Co., Ltd., Kyoto, Japan), and a head-mounted display called Oculus Quest 2 (Reality Labs, a division of Meta Platforms, Menlo Park, CA, USA) (Figure 1). The VR training commercial video games used were Just Dance 2022 for the Xbox One; Nintendo Switch Sports for Nintendo Switch and Ragnarock VR, Beat Saber and The Climb 2 for Oculus Quest 2. These games involved different virtual scenarios and movements, such as dancing, playing tennis, climbing, or playing bongos. All VR training was performed in turn with GAM training (Figure 2). The intensity and perceived effort of each session were recorded for each participant.

(**a**) (**b**)

Figure 1. (**a**) Student using the Kinect device; (**b**) Kinect device (Microsoft Corporation).

Figure 2. Group of students using the Nintendo Switch.

Perceived effort was evaluated after every activity during sessions, and the following variables were assessed before and post-intervention: motivation and satisfaction with PE, motor skills, and perceived health. All study variables were evaluated both quantitatively through different validated instruments (Pictorial Children's Effort Rating Table [31], Questionnaire of Motivation in Physical Education Classes [32], the Spanish Version of the Sport Satisfaction Instrument Adapted to PE [33], the SportComp Motor Test [34]), and qualitatively through interviews and focus groups.

2.4. Participants and Data Collection

A purposive sampling method was used to recruit participants who had experience with the application of VR in an educational context. The participants in this study were the seven researchers who investigated the effects of using gamification and VR in PE, using the practice teaching style. All participants were >18 years old, had >5 years of experience with VR technology, did not have any conflicts of interest with any of the technology used, and did not have any legal limitation to work with the adolescent population.

The participants completed a personal researcher diary throughout the educational intervention. The participants' diaries provided a rich source of information as they described personal perspectives from the participant's point of view [35]. To prepare these diaries, participants were asked to include some elements in the reflective process: difficulties in implementing technology in the classroom, differences between what was planned and what was actually carried out in the classroom, tensions experienced due to the limitations of the functioning of a secondary education institution, and the level of satisfaction after every lesson of the intervention. Additionally, a 1 h focus group (FG) was held with five of them. The FG was conducted by a moderator following a uniform structure [25]. The moderator posed questions to which each participant responded. Subsequently, the moderator posed further questions, based on the issues raised in the discussion, to further explore or clarify aspects.

2.5. Analysis

All personal diaries and FGs were transcribed verbatim and supplemented with the researchers' field notes. An inductive thematic analysis was carried out [36,37]. The analysis consisted of identifying the most descriptive content to obtain codes and subsequently reducing and identifying the most common significant groups (categories). In this way, groups of significant units (i.e., similar points or content that allowed for the identification of themes that described the experience of the study participants) were formed [36,37], giving rise to the categories of analysis shown and discussed in the following sections of the paper (difficulties in data collection before, during, and after the intervention, differences between VR interventions in laboratory and educational contexts, and the transferability of the use of VR devices to the practice of school PE: possibilities and difficulties), from which, in turn, subcategories emerged that were specifically addressed. This process was carried out separately in the focus group and in the researchers' field notes, combining the results for presentation and final discussion. No qualitative analysis software was used. The Microsoft Excel® program was used to organize and share the coding process.

2.6. Rigor Considerations

This study follows the Lincoln and Guba recommendations to manage the trustworthiness of research, which include techniques for establishing credibility, transferability, dependability, and confirmability of the data [24,25]. The following techniques were used: (a) researcher triangulation during analysis (credibility); (b) member checking (credibility); (c) comprehensive description of the study (transferability); (d) records of the reflexivity process during the study (confirmability); (e) coding based on participants' narratives (credibility and confirmability); and (f) external audit (dependability) [24,25].

3. Results and Discussion

3.1. Difficulties in Data Collection before, during, and after the Intervention

3.1.1. Difficulties in the Use of the Selected Tests

Two tests were applied to the students to compare the possible variations in the perceptual motor aspects. One of them was the SportComp Motor Test [34]; it is composed of five tests complemented by three Eurofit tests [38]. The participants expressed their difficulty in finding tests that could measure motor coordination in the chosen population group (adolescents) and validated for the country in which the study was conducted (Spain)—problems already encountered by authors such as Barnett et al. [39] or Lopes et al. [40]. For this reason, it was necessary to apply two complementary tests to try to obtain the desired information and overcome one of the most frequent limitations of the tests, i.e., specificity [41], which forced the researcher to have to use more than one test.

> "To carry out the physical tests before the intervention, I had to manufacture some materials (supports and jumps), as the materials (measurements) were very specific, and there is no option to find them except in specialized shops (Leroy Merlin). This is a difficulty in applying the Sportcomp, but, on the other hand, it is one of the few tests that measure motor coordination in adolescents in Spain."
>
> (Participant 2)

Some of the tests aimed to measure motor coordination in adolescents (e.g., [42,43]) were reduced to the therapeutic context mainly due to the difficulty of applying them in educational contexts where the number of participants, time pressure, and logistical difficulties increased the complexity of their application [34,41].

> "The plate-tapping test is the one that has cost me the most because some students did not touch inside the circumference because they tried to go fast, or on some occasions, I lost the content of the test. So, it was 'null' and they had to repeat it after a short break."
>
> (Participant 2)

> "In the pre-intervention data collection, we realized that we were performing the Flamingo test badly because we were not stopping the stopwatch every time the students became unbalanced."
>
> (Participant 4)

As the literature shows, an inverse proportionality was usually found between the usefulness and specificity of the tests and the aspects of the economy of time and materials and the aspect of personnel necessary for their application [44]—all of them being, however, quality criteria that are established for the use of physical tests [45].

3.1.2. Difficulties in Organizing Tests

According to Bardid et al. [41], there are certain logistical difficulties that the researcher must overcome for the correct application of tests in an educational context. One of the difficulties most highlighted by the participants was the difficulty of controlling and organizing the participants. Group management in a physical education class is not easy due to the space in which it takes place and the levels of activity reached [46,47]—a circumstance that is also noted in the application of the initial tests before the intervention.

> "Perhaps it is a perception that stems from my limited experience with this stage of education, but I did perceive at times a certain degree of lack of control as the researchers were testing some students, but many others were either sitting around waiting for their turn to be measured or messing around. In this case, they threw a big mattress that was in the classroom."
>
> (Participant 4)

> "We failed to calculate the time needed for each test. Some of them were done quickly, like the speed tests, but some, for example, the 'flamingo test' took much longer, almost a whole session to evaluate all the students. Thank goodness, we were three assessors."
>
> (Participant 1)

Despite having planned the sessions that would be necessary to be able to carry out the initial tests on all participants for several weeks, in the end, the time devoted to data collection had to be extended, as some tests required more staff and more time than the researchers had previously thought. The time factor is one of the most frequent constraints that must be dealt with in educational research [48].

3.1.3. Perception of Differences in the Application of Tests in Educational Contexts Compared to Laboratory Contexts

Unlike laboratory research, although it may even have a certain degree of naturalism [49], in this type of semi-naturalistic research in real educational contexts, many factors cannot be controlled or predicted since work is conducted with a large number of participants who are also in their usual learning environment [48].

> "It seems to me to be a type of intervention that would require more research staff in charge of the order, but it must be taken into account that this is the real environment of an educational center, so a more controlled intervention would perhaps lose realism or external validity."
>
> (Participant 4)

> "I have done tests with adult women, and for two participants there were at least four or five researchers. I understand that it is more difficult to meet the researcher-student ratio in a class with 30 students because it would require too many researchers."
>
> (Participant 4)

Research using virtual reality presented more controlled environments with a smaller number of participants for the initial and final tests [50–52]; however, the need to conduct eight tests with groups of 25–30 students caused a mismatch in the initial schedule proposed by the researchers. Studies such as those mentioned above, because they have a more favorable researcher/participant ratio, make it easier to apply the initial and final tests. One of the researchers, who was used to conducting research in laboratory contexts with fewer and older participants, pointed out the difficulty of organizing personal resources for this important phase of the research.

3.1.4. Difficulties in the Students' Daily Record-Keeping

One of the parameters to be considered in the intervention was the students' perceived effort. The Pictorial Children's Effort Rating Table (PCERT) was used to assess perceived effort [53]. This data had to be recorded by all the participants at two points in each session: in the middle of the session and at the end of the session. Each participant had a sheet of paper on which they simply had to write down a number that reflected their perception of effort, but the simple fact of looking for the sheet that corresponded to each participant, ensuring everyone had a pen with which to write down, collecting all the sheets again to have them available for the next data collection, etc. meant a significant waste of time and stress for the researchers.

> "The feeling at the end is one of absolute chaos. It generates a lot of anxiety to know that if we don't go quickly we don't have time for everything...we have to rush the students to complete the effort recording sheet... some students fill it in wrong and we have to correct it...we try to have as much practice time as possible, but there is a lot that goes into changing stations, recording effort, counting points, etc."
>
> (Participant 1)

> "They still struggle with the dynamics of recording the perception of effort, we have to be very attentive to them so that they fill in the sheet at the end of the activity."
>
> (Participant 2)

Time management in physical education classes has been the subject of several studies [54,55], reflecting the need to minimize the time wasted, which undoubtedly exists irremediably due to the characteristics of the subject. However, this problem increases when we add the need to record data throughout the session and remains until the end of the intervention, although following Gómez-Mármol and Valero [56], the establishment of routines helps to better manage time, attenuating somewhat the loss of time in the last sessions of the intervention.

3.2. Differences between VR Interventions in Laboratory and Educational Contexts

3.2.1. Use of the Necessary Technological Elements

The facilities of a public educational institution are designed for teaching but not for research [57]. Research that demands certain material requirements, such as the research that is the subject of this paper, may be limited by the lack or inadequacy of these facilities. The use of semi-immersive virtual reality requires a projector and a screen on which the game scenarios can be seen [20], and the lighting conditions in a gymnasium may not be suitable, as reflections on the screen may occur and require adjustments.

> "We had problems with the reflection of the projector to make it look sharp. We had problems with the installation as we didn't know where to place the projector because there was too much light, and it didn't show the game properly with the Xbox One. In the end, we placed it in a corner where it was a bit darker."
>
> (Participant 6)

The students had to carry a pen with them to record their perceived effort [53], which also conflicted with the technological equipment used.

> "The glasses get dirty because of the ink from the pens on the student's hands."
>
> (Participant 7)

> "Some kids, maybe because they are introverted or embarrassed, don't tell us that the game has been interrupted and they are on the menu screen. He finishes the time and, when we ask him, he tells us that he was only able to play for a while because then it wouldn't let him."
>
> (Participant 6)

> "We started with a problem with the connectivity of the switch controllers, but it was quickly solved."
>
> (Participant 6)

As has already been shown in other research that makes use of technological elements in the classroom [48], fluency in the classroom can sometimes be interrupted by small technical problems, something that happens with the use of VR glasses in any educational intervention [58].

3.2.2. Space Management

The place in which a physical education class is held is decisive for the achievement of the objectives set for it [59] and influences aspects such as methodology, class organization, and student motivation [60,61]. The methodology used—a combination of gamification, the use of virtual reality, and the application of the practice style—demanded group work in a space that was not too large (a gymnasium with dimensions similar to a basketball court), which produced some interference between the participants who were using the VR glasses and those who were not.

> "We should limit the play area of the VR goggles as the students were getting too close to each other."
>
> (Participant 7)

> "We have implemented another way of placing the goggles, to avoid them bumping into each other and to make it easier to put it on and start playing earlier."
>
> (Participant 5)

This highlighted the need to make adjustments to allow simultaneous VR activities and other gamification-based activities. Unlike the application of VR in healthcare contexts, for example, where spaces are not so crowded and conditions for the correct use of technology are more favorable [62], in educational research, spatial conditions are limiting and must be taken into account to avoid possible student accidents and damage to VR devices [63].

> "There was too much noise as the other activities carried out by the other groups in the pavilion generated much more noise than the previous activities. In addition, these activities are done with the use of tennis balls that end up in our area of the hall, and we had to be vigilant to prevent any of the students with the virtual reality goggles from tripping or being hit by one of these tennis balls."
>
> (Participant 6)

Blinded for peer-review, [57] mention noise as one of the distorting elements in physical education classes. To this problem is added the circumstance of the need to listen to the music that is playing through the projector to which the Nintendo that a group of pupils play with is connected. The game consists of moving to the rhythm of the music, and this becomes difficult if the audio quality is not good, especially when using semi-inversive technologies [64]. The problem of noise is minimized in clinical research or laboratory contexts, where environmental conditions are much more controlled [50].

3.2.3. Time Management

The workload for researchers when applying VR together with a pedagogical model such as gamification is very high, which results in time management problems. To carry out research rigorously following the gamification model, it is necessary to follow the planning created by gamification experts so that the effects produced in the intervention are due to the application of this methodology and not due to other factors [65], and the same occurs with the implementation of virtual reality, since a lack of monitoring of the established protocol can distort the results obtained [58].

> "Today there was a misallocation of time and we had to adjust on the fly."
>
> (Participant 7)

> "We also encountered time problems when communicating, as having cut some overall time because of the explanations on the first day, we did not understand each other when swapping groups and one of the groups spent more time at one of our stations."
>
> (Participant 6)

Adjustments during the intervention process in a research intervention are inevitable but even more so when using technologies that have certain handling demands on the part of the researchers and that can slow down the intervention [48].

> "I found the session times to be limited; we had thought that the playing time for each device was longer than what we were able to do. We have adjusted the times and in the following sessions it will be better distributed as some students have had to play more on one of the devices due to time problems."
>
> (Participant 6)

Although the literature suggests alternating the use of virtual reality with other activities without technology (School of Education, 2023), the large number of participants in the group and the small number of virtual reality devices forced a faster rotation than was desirable so that all the students could make use of the technology during the session. The results of this study show the need for better time management in the application of VR in the classroom to reduce the possible harmful effects of stress on students [66]. This is something we always try to avoid in clinical or laboratory research.

3.2.4. Difficulties in the Number of Researchers and the Distribution of Roles during the Intervention

The practice style [2] allows students to have more say in the management of practice time, which, in principle, should allow the teacher to have a less directive role and to be available to students for feedback [3]. However, the research design called for the creation of four groups of participants, each of which carried out a different activity, one of them being the use of virtual reality. In each session, there were at least two researchers in charge of the group undertaking the VR activity and one or two other researchers, in addition to the teacher in charge of the other three groups, which performed gamified activities without VR. However, the researchers' perception is that more colleagues would have been needed to help in the intervention, mainly because they had to count the points obtained by the students, ensure that the rules of the game were followed, answer possible questions from the students, etc. Other interventions with gamification were able to include the figure of observers, who were researchers from outside the school who recorded data and even helped the group's teacher [67], but in this case, the sum of VR plus gamification demanded a large number of research staff, which was not always met.

> "I had to explain and supervise two games: not to drop the bombs and to keep the bombs active. Again, it was chaotic to play both games at the same time to be able to count the points correctly. Most of the students tend to cheat and don't respect the rules."
>
> (Participant 3)

> "In clinical practice, there are far fewer participants, which greatly improves the researcher/participant ratio. Each researcher can focus much more on the participants and on getting the intervention right. In the case of the intervention in the educational context, being a large group of about 30 pupils, a lot of energy is lost in control and management work, and less focus can be put on the intervention as such."
>
> (Participant 5)

VR interventions in clinical or laboratory contexts are carried out with a large staff, each of whom has a defined role in the intervention so that everything is as controlled as possible [50]. However, research in educational contexts is more problematic to the human resources involved for reasons of access to schools and basically because it involves very large groups of participants [68].

3.3. Transferability of the Use of VR Devices to the Practice of School Physical Education: Possibilities and Difficulties

3.3.1. Particularities of Secondary School Students

> "My perception of the male participants was that they care a lot about the approval of their peers and comparing themselves to them and, far from trying to perform as well as possible, they tried to outdo each other."
>
> (Participant 4)

> "There is quite a difference between the level of motivation of some students and others, which makes the class quite heterogeneous and the way of approaching teaching becomes complicated because different pedagogical tools have to be used."
>
> (Participant 2)

Motivational aspects in physical education have been widely studied in the scientific literature [69,70]. The existing heterogeneity, together with the evolutionary period in which the students find themselves [71], demands diverse methodological actions on the part of the teaching staff. In the case of an intervention that is part of the research, this need increases due to the particularities of the intervention itself and the novelty of the proposal for the students [72].

3.3.2. Particularities in the Dynamics of the Functioning of a Group in the Educational Context

The group in which the intervention is carried out has particular dynamics and codes of operation, which the researchers do not have to know when they arrive at the educational center for the intervention. Again, these researchers, many of them accustomed to research in more controlled contexts, must make unexpected adjustments to adapt to the unforeseen events typical of any educational intervention [48].

> "One of the researchers had to play because there were only 3 people so that the controls would not be misconfigured."
>
> (Participant 5)

> "A girl doesn't want to dance so we let her continue with the glasses."
>
> (Participant 7)

> "On the days when we had to set up everything within the course schedule, we had a worse time, because the students were already in the gym, and there was a lot of noise. In the laboratory context, this is minimized because there is not as much overlap between groups; there are fewer participants, and the material can be handled more easily in space."
>
> (Participant 5)

Some of the factors that might represent a deviation from the previously established plan were related to the organizational aspects of the educational center itself and the dynamics developed by the teacher of that group in that specific subject, which was why the search for models was essential. Partnerships responded to the demands of teachers and students and the center itself [73,74]. In the case of this research, some of these demands could be considered, given that the PE teacher was part of the research project.

3.3.3. Perceptions on the Transferability of the VR Intervention to the PE Curriculum in Educational Centers in a Generalized Way

If there is a population group in which the use of VR can be easier and more motivating, it is adolescents. Most of them are familiar with technologies and video games, which facilitates intervention both at a logistical and motivational level [73–75]. In addition, the use of VR can be beneficial for pupils who have a lower level of motor competence than others and even for pupils with disabilities.

> "I think it works very well with adolescent students because they are very familiar with technology."
>
> (Participant 7)
>
> "Time is wasted only at the beginning, when teaching them how to configure the devices, but from that moment on the effective time of use can be very high without great demands on personnel."
>
> (Participant 5)

It is not easy economically for an educational center to be able to have 25–30 VR devices since this would mean an outlay of about 10,000 euros. However, a more realistic proposal is to complement immersive VR with semi-immersive VR [20], since with a Nintendo video game, for example, up to six students can play at the same time, although it is also necessary to take into account the limitations of time, human resources, and possible technical issues that would limit the possibility of its real and continuous application in PE lessons.

> "The glasses are expensive, between 300 and 400 euros for basic models, although it depends on the storage capacity. Each game costs about 20 or 30 euros."
>
> (Participant 6)
>
> "The ideal would be to have as many glasses as there are students in class, but if immersive VR is mixed with semi-immersive VR (with Xbox, for example), several students can participate at the same time and take turns."
>
> (Participant 7)
>
> "Although it may seem like an expensive material, if it is compared to other materials purchased in PE departments such as benches, mats, goals, or baskets, it is acceptable for many centers to have at least three or four devices. In any case, there is always the option of using semi-immersive VR that allows up to six students to participate at the same time, and the center's projector and screen can be used, without having to buy too much specific material."
>
> (Participant 1)

As is the case with technologies such as EEG or tablets [48], their high cost can represent an insurmountable barrier for many educational centers, reducing the transferability of the research carried out, something that teachers have been complaining for years [75]. However, as the same researchers point out, there are methodological options that can make its use viable in a large number of schools. Nevertheless, it should be noted that in this study, there was a minimum of four researchers in each SP session, which is not common in a usual work environment. It should be the same PE teacher who should prepare the devices, help the students to use them, and solve possible inconveniences, while still having the responsibility of leading the educational proposal without any additional help.

A limitation of this study is that members of the research team were included as participants. This may influence the results and their interpretation. To control for this bias, trustworthiness control techniques were applied, such as triangulation, external audit, and reflective notes from participants during the process of applying the VR program. Another limitation is the absence of a template to complete the researcher's diaries; therefore, the results may have been slightly influenced. However, the main strength of this study is that it shows the perspective of a research team applying VR in an educational context.

4. Conclusions

Research on the application of VR in a classroom setting differs from its application in clinical or laboratory settings. Firstly, there are difficulties in the application of the tests necessary to determine the effects of the intervention, as well as in the information that the students themselves must record throughout the process. Secondly, the necessary equipment requires management of resources, time, and space, which is different from research in non-school contexts. Finally, there is room for optimism about the use of VR in education in general, and PE in particular, although it is important to be aware of the particularities of learners, group dynamics, and possible logistical barriers that may limit its successful implementation. More research is needed on the use of VR in education, as this technology has been used much more in other contexts.

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