WHAT EXPECTATIONS AND DIFFICULTIES ARE PERCEIVED BY PRE-SERVICE PHYSICAL EDUCATION TEACHERS WHEN THEY IMPLEMENT THE PEDAGOGICAL MODEL OF TEACHING GAMES FOR UNDERSTANDING? A QUALITATIVE STUDY

¿QUÉ EXPECTATIVAS Y DIFICULTADES PERCIBEN LOS FUTUROS DOCENTES DE EDUCACIÓN FÍSICA EN LA IMPLEMENTACIÓN DEL MODELO DE ENSEÑANZA COMPRENSIVA DEL DEPORTE?: UN ANÁLISIS CUALITATIVO

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Título Abreviado:
Expectations and Dificulties in the Implementation of the Pedagogical Model Teaching Games for Understanding

How to cite this article:
Sanz-Remacha, M., Diloy-Peña, S., Abós-Catalán, A., García-González, L., Navasa, I. & García-Cazorla, J. (2025). What expectations and difficulties are perceived by preservice physical education teachers when they implement the pedagogical model of teaching games for understanding? A qualitative study. *Cultura, Ciencia y Deporte, 20*(66), 2129. https://doi.org/10.12800/ccd.v20i66.2129

Received: 7 November 2023 / **Accepted:** 26 January 2025

Abstract

To date, many studies have shown the benefits of implementing a pedagogical model of Teaching Games for Understanding (TGfU). However, pre-service teachers perceived difficulties in its implementation. The aim of the study was to examine their expectations before using the TGfU model as well as to identify the difficulties afterwards. Method: Four pre-service Physical Education teachers participated in the study. Two focus groups were carried out to collect data, and a thematic analysis was performed. Based on a reflective deductive and inductive thematic analysis, two main themes were identified: 1) Expectations for the future implementation of TGfU during a teaching unit (TU); 2) Difficulties perceived by pre-service Physical Education teachers after the first implementation of TGfU. Results and discussion: Pre-service teachers expected the students to understand the internal logic of sports better, as well as to have positive experiences. However, the participants emphasized that they spent more time designing the TGfU sessions than for the traditional model. Moreover, they noted students' lack of familiarization with the interrogative feedback. Conclusions: It is recommended that training programs include practice where future teachers can implement tasks based on TGfU. This will provide them with more tools to be able to adapt the tasks to the reality of the classroom.

Keywords: Barrier, pedagogical model, Secondary School, teacher, thematic analysis.

Resumen

Hasta la fecha, numerosos estudios han mostrado los beneficios de la aplicación de un modelo de enseñanza comprensiva durante las clases de Educación Física. Sin embargo, los futuros docentes en formación perciben dificultades a la hora de aplicarlo. El objetivo del estudio fue examinar las expectativas de aplicación del modelo de Enseñanza Comprensiva del Deporte (ECD), así como las dificultades percibidas durante su implementación. Método: Participaron cuatro futuros docentes del Máster de profesorado de la especialidad de Educación Física. Los datos fueron obtenidos mediante dos grupos focales y se llevó a cabo un análisis temático. A partir de un análisis temático reflexivo deductivo e inductivo, se identificaron dos temas principales: 1) Expectativas hacia la futura implementación de la ECD durante una Unidad Didáctica (UD); 2) Dificultades percibidas por los futuros docentes de EF tras la primera implementación de la ECD. Resultados y discusión: Al implementar el modelo, los futuros docentes esperaban que el alumnado comprendiera mejor la lógica interna de los deportes, así como generar experiencias positivas. Sin embargo, tras la implementación de la UD destacaron que al usar este modelo invirtieron más tiempo en el diseño de las sesiones que en un modelo tradicional. Además, sentían que el alumnado no estaba familiarizado con el modelo y el feedback interrogativo. Conclusiones: Se recomienda incorporar a los programas formativos, prácticas donde los futuros docentes puedan aplicar situaciones de aprendizaje basadas en la ECD, ofreciéndoles más herramientas para poder adaptar las tareas a la realidad del aula.

Palabras clave: Análisis temático, barrera, Educación Secundaria, modelo pedagógico, profesor.

Introduction

Numerous studies have shown that the school setting, specifically Physical Education (PE) classes, is appropriate for the promotion of Physical Activity (PA) (Hegarty et al., 2016; Hills et al., 2015). According to PE teachers, generating positive experiences during classes could favor practicing PA outside the educational context and predispose students to adhere to active lifestyles (Telama et al., 2014). To create positive experiences in the classroom, the recent focus has been on the use of student-centered pedagogical models during PE classes (Casey, A., & Kirk, 2020) . Recent systematic reviews have shown that using student-centered pedagogical models, such as the pedagogical model of Teaching Games for Understanding (TGfU), where students are the protagonists of their own learning process, can influence their motivation. They have also highlighted that using this type of model could increase students' enjoyment during classes, encourage their self-determined motivation towards PA (Bracco et al., 2019; Diloy-Peña et al., 2022; Stolz & Pill, 2014) , and, consequently, favor future adherence to active lifestyles (Morales-Belando et al., 2018).

TGfU (Bunker & Thorpe, 1982) has been postulated as an effective alternative to the technical-traditional model of teaching sports (Harvey & Jarrett, 2014) . This model is based on global game situations in which technical actions are integrated in a contextualized way when the students' needs demand it (Barba-Martín, et al., 2020). Thus, through modified games, the implementation of this model could enhance students' participation, decision-making, and tactical understanding (Barba-Martín et al., 2020; Fernandez-Rio & Iglesias, 2022; Harvey & Jarrett, 2014). For the correct development of TGfU, PE teachers should use *interrogative feedback* appropriately to guide the students' learning. Its adequate use could also help them make decisions during classes and discover solutions to the problems posed (Harvey & Jarrett, 2014; Stolz & Pill, 2014) .

Despite the benefits (e.g., improvement in students' affective, motor, and cognitive domains, etc.) of applying TGfU (Barba-Martín et al., 2020; Fernandez-Rio & Iglesias, 2022; Harvey & Jarrett, 2014) , the percentage of PE teachers who apply it is still low (Fjellner et al., 2022). One of the reasons for this low implementation could be the difficulties perceived to develop TGfU during PE classes. Similarly, and in line with the results of some previous research (Nunez-Regueiro et al., 2022), the low teaching load of the PE subject, the high ratio of students per class, the lack of teacher training in this model, and the complexity of its evaluation are difficulties usually perceived by PE teachers. These difficulties could generate feelings of inability to implement TGfU correctly and, as a consequence, trigger a lack of familiarity with the model and the students (Nunez-Regueiro et al., 2022).

Specifically, these difficulties could increase in novice teachers, or even in future PE teachers who are still in initial training during the Master's Degree in Teaching (hereafter, pre-service teachers), due to their lack of experience and the need to have greater control of the class (Nunez-Regueiro et al., 2022). In fact, a study by McNeill et al. (2004) showed how pre-service teachers of the PE Teaching Degree perceived difficulties in designing a teaching unit (TU) and choosing the contents to be developed. However, research has also pointed out that the use of interrogative feedback is one of the difficulties usually perceived by pre-service teachers, as it can affect students' motor commitment and motivation over time (Harvey & Light, 2015) .

Currently, some studies have examined the barriers perceived by PE teachers when implementing student-centered pedagogical models (Stolz & Pill, 2014) , but few have explored these barriers from a qualitative perspective among pre-service teachers (Fjellner et al., 2022). Considering the numerous benefits that the implementation of TGfU has for student motivation and learning (Fernandez-Rio et al., 2022), it is important to examine why pre-service PE teachers do not implement this model in their first practical experiences. This information could greatly contribute to reconsidering the design of initial training plans.

To address this gap in the literature on TGfU, this study aims to examine the expectations of future PE teachers regarding the application of the TGfU model and the difficulties they perceive while implementing it in a TU.

Materials and Methods

Informants and Procedure

Through intentional sampling, a total of four students in initial training at a public university in northeastern Spain, who were studying the Master's Degree in Teaching in Compulsory Secondary Education in the specialty of PE, participated in the study (M_{age} = 22.75, SD = 0.95; 100% men). All the informants were graduates in Physical Activity and Sports Sciences from the same University. Before starting the study, they were informed about its objectives and verbally agreed to the audio recording of the focus groups.

To complete their training as PE teachers, students must take a compulsory subject called Practicum II, in which they carry out a five-week immersion in a Compulsory Secondary Education center to design, implement, and evaluate a TU. All the informants carried out their training classes in publicly owned centers. They were the only students of the Master's Degree who had designed a TU based on the TGfU model. The student/class ratio of the schools where Practicum II and, consequently, the implementation of the TU, were carried out ranged between 25 and 28 students in the four cases examined. All of them taught their TUs in the 3rd grade of Compulsory Secondary Education, whose TU contents were collaboration-opposition sports (i.e., floorball, tchoukball, ultimate, and hockey).

Instruments and Variables

Data were collected through two focus groups conducted on the Google Meet platform because the informants' time restrictions prevented in-person sessions. To encourage informants' participation in these focus groups, a trusting environment was established during the video call to examine their responses in depth. The focus groups were moderated by a person of the same sex, age, and professional category as the informants, which also favored an optimal climate. The moderator was accompanied by a second researcher who was an expert in qualitative methodology.

The first focus group, concerning expectations for implementing a TU through the TGfU, was held in March 2022, before starting Practicum II. The second focus group, related to the perceived difficulties in implementing TGfU, was held in May 2022, after the Practicum period was completed. Based on the characteristics of TGfU and previous evidence on expectations, difficulties, and barriers to its implementation (Fjellner et al., 2022; McNeill et al., 2004; Wright et al., 2006), questions related to the following topics were formulated: 1) Reasons for choosing the pedagogical model to be developed; 2. Organization of the sessions; 3) Use of interrogative feedback during sessions; 4) Design and application of modified games; and 5) Time management. Both focus groups lasted approximately one hour. Subsequently, the focus groups were transcribed verbatim for data analysis.

Data Analysis

Assuming a relativistic ontology (Smith, 1989; Sparkes & Smith, 2014) and a constructivist paradigm where informants construct the reality to be studied (Guba & Lincoln, 1994; Hernández et al., 2010) (Guba & Lincoln, 1994; Hernández et al., 2010), a reflexive, deductive, and inductive thematic analysis was carried out through NVivo software to generate themes within the data obtained. The aim was to describe and interpret the data's meaning and importance (Braun et al., 2021). Following the six steps established by Braun et al., (2021) the focus groups were transcribed verbatim and subsequently verified. Initially, the research team read the transcripts to familiarize themselves with their content, learn about the dataset, and encode the ideas that provided meaning and responses to the research questions. This initial coding process was essential for observing the data and capturing relevant content. Subsequently, the phases of theme development and definition were carried out. For this purpose, the initially coded data were organized, and potential topics were developed to address the research questions and achieve the study's objectives. The aim was for the themes to capture broad meanings. Based on the provisional themes, several researchers contacted a review process that led to the definition of the final themes. Each defined topic is a brief description of the essence of the ideas perceived by the informants and is consistent and distinctive of the reality under study. After completing the analysis process, considering the expectations for the future implementation of TGfU during a TU, the following topics were generated: 1) Expectations related to student learning during the implementation of TGfU; 2) Possible previous problems or drawbacks perceived by future PE teachers before implementing TGfU; 3) Preparation for the implementation of a TGfU-based TU. Concerning the final themes generated on the difficulties perceived by future teachers, the following were defined: 1) Lack of students' familiarity with TGfU; 2)

Difficulties perceived by pre-service teachers related to the use of interrogative feedback during the TU; 3) Difficulties related to the design of the sessions during their implementation; 4) Future PE teachers' lack of theoretical knowledge and real practical experience in the implementation of TGfU.

To guarantee the quality of the data analysis process, as well as the rigor of the qualitative methodology, the criteria proposed by (Tracy, 2010) were followed. First, the topic to be studied was ensured to be relevant. In addition, rigor was also achieved through the use of solid theories, a defined context, and an adequate sample to provide answers to the research questions. The criterion of sincerity was achieved through reflexivity, as expressed by the researchers when describing the data analysis procedure, and through transparency in the sample of fragments representing the created themes. In addition, the topics generated, and the teachers' perceptions could help readers relate to their situation and generalize the research to their own contexts. This could reach the resonance of the study. Finally, the present study suggests practical implications based on future teachers' real perceptions, which could advance research in this field.

Results and Discussion

The data obtained according to the main objective of the study are presented and discussed below: to analyze the expectations and difficulties perceived by future PE teachers when applying TGfU during a TU.

Expectations for the Future Implementation of TGfU During a TU

After the theoretical training and before implementing the TGfU -based TU, the future PE teachers expressed their expectations.

Expectations Related to Student Learning During the Implementation of TGfU

The informants commented that the use of TGfU could increase students' significant learning by understanding its internal logic (Stolz & Pill, 2014) , allowing the transfer of tactical principles to the practice of other sports and/or games that share this internal logic:

> "It can help them to progress little by little. And to understand the sport, even if they do not know how to master the technical fundamentals, but they can master the tactics, and from there, they can progress and understand the sport" (Informant 3).

At the same time, TGfU could increase students' self-determined motivation towards PA due to the satisfaction of understanding its tactical principles (Bracco et al., 2019). Along these lines, Informant 4 expressed his expectations that the implementation of this model could promote the practice of AP outside of school hours:

> "I believe that, if the tactical fundamentals are well understood, then it will be much easier for them to understand new activities. And, above all, if they are interested in sports or are already practicing a sport, it will be easier to create intelligent players" (Informant 4).

In this sense, the students' needs should be considered from the viewpoint of the TU design to adequately connect the model, the teaching context, and the students (Chow et al., 2007).

Possible Previous Problems or Drawbacks Perceived by Future PE Teachers Before the Implementation of TGfU

In general, one of the problems that future PE teachers anticipate is the lack of familiarity and inexperience with interrogative feedback:

> "The most negative thing is that students are not very familiar with this model (...) I think it can be negative because they are not used to it (...) What they want is to play and not have to reflect [he speaks as if he were the student]" (Informant 3).

> "What scares me the most is how they are going to react to the reflection interruptions, when it comes to interrogative feedback and, really, how am I going to direct their answers to where I really want them to go? (...) Then another problem will be whether or not we know how to guide it as best as possible, or that these reflections do not use too much time of motor commitment" (Informant 4).

Interrogative feedback is a fundamental teaching skill to improve teacher interventions and promote student reflection (Yan et al., 2022). However, developing correct and effective interrogative feedback is a complex task, especially for future teachers (Harvey et al., 2015), and it becomes even more difficult when students are not familiar with this type of feedback. Thus, strategies such as "the six Ps" (1-Purpose, 2-Play, 3-Pause; 4-Prepared, 5-Probing, and 6-Plan; (Harvey & Light, 2015) could facilitate the use of interrogative feedback among trainee teachers. Likewise, designing short questions could also be effective in promoting students' answers and reflections (Harvey & Light, 2015) .

However, another problem anticipated by the informants is that, during the TU, some students will have to face tactical situations that they do not feel capable of solving. For this purpose, the informants explain that, initially, they would try to solve this through interrogative feedback. Next, if the cause is the lack of control of technical actions, they claim to have the resources to include technical analytical exercises whenever students need them:

> “It is a model in which you ultimately have to stop and reflect with the students. If you notice something is not going quite right or that they do not understand it, you should interrupt the session briefly, gather the students, and have them reflect on the task's objective and the best way to achieve it. From there, continue and gradually implement some variant to facilitate the exercise. Thus, through their reflections and a modification of the exercise, you can try to solve it" (Informant 3).

> “We reflect all together and move forward. If I see that the tasks turn out well, but the problem concerns the passes, then we reflect, we realize that our error is technical, and we look for a specific technical task" (Informant 4).

Through interrogative feedback, students should be able to find solutions to the problems posed by the teaching staff in the various learning situations of the TU. However, if the problem lies in the need to teach a technical aspect, TGfU allows for the inclusion of contextualized analytical exercises whenever the students demand them to solve tactical situations (Bunker & Thorpe, 1982).

Preparation for the Implementation of a TGfU -Based TU

Compared to the technical-traditional teaching model, the informants anticipate that when designing the TU, they will have to invest more time in its preparation:

> “From my point of view, it was harder for me than if I said, 'come on, let's do this pass and shoot at the goal' (Informant 1).

> “What was the most difficult for me was to think of tasks that leave aside technique and are more focused on tactics" (Informant 4).

Thus, in line with previous studies (Light & Butler, 2005) , designing a TU using TGfU may require more time to prepare the learning situations because it demands a deeper tactical knowledge of the content.

However, the progression of the TU is also influenced by the teaching model used. This model uses modified tactical games as a basic tool to facilitate learning. There are two types of modifications: representation games and exaggeration (Casey, A., & Kirk, 2020) . In this case, Informant 1 stated that he chose to modify the number of players for each situation as the floorball TU progressed:

> “At the beginning, situations with few players. Propose situations with more players so they will realize that it is easier to score a goal if three of us are attacking and two are defending, so that later on, when we are a real game situation, they will look for that and learn about the fundamentals of the sport. They learn the sport more than the technical skills or how I should hit the ball" (Informant 1).

The progression proposed through modified games could be adequate because initially, physical requirements and tactical complexity are reduced, which could help to adjust the task to the students' different levels and possibilities. In this way, integrating representation games and/or exaggeration games to control for TU progression could promote students' meaningful learning (Arias et al., 2011), the development of basic competencies (Rodríguez, 2010), and adherence to practicing PA (Van Acker et al., 2011).

However, the design of the modified games could generate difficulties for pre-service future PE teachers:

> "In my case, to create them, [modified games] you give a twist to various exercises so that they match the tactical principles that you want to work on, and that is what was the most difficult for me: trying to find situations that are related to what I want to work on" (Informant 3).

These difficulties during the design of the TUs seem common among future PE teachers and are often exacerbated by a lack of understanding of the concept of "modified game" and insufficient theoretical and practical training in this model in general (Harvey et al., 2015).

Finally, to carry out the modified games, the group must be well organized. Designing these groups before conducting the TU does not seem to be an initial concern for future PE teachers. Teacher 4 shows the need to create groups by affinity or randomly at the beginning of the TU, and later, if the situations require it, to organize the class by levels:

> "To begin with, as I don't know the group, I'm going to let them get together by affinity, and that will help me see the situation. Later on, I would have to make groups by level" (Informant 4).

Considering that, in most cases, pre-service PE teachers do not know the students well, using affinity grouping strategies could help satisfy students' social relationships and autonomy, and consequently increase their enjoyment and fun (Sánchez Gómez, 2015).

Difficulties Perceived by pre-Service PE Teachers in Initial Training After the First Implementation of a UD-Based TGfU

Once the TU was implemented, pre-service teachers perceived the following difficulties:

Lack of Students' Familiarity With TGfU

Despite the benefits of TGfU for PE classes (Barba-Martín et al., 2020; Fernandez-Rio & Iglesias, 2022; Harvey & Jarrett, 2014) , many teachers still use a technical-traditional teaching model (Fjellner et al., 2022). Aligning with this, the participants of this study perceived that the students were not used to working with student-centered pedagogical models:

> "It was more difficult for me than I thought because the students did not have a minimum technical level for situations, problems, and tactics. So, all the problems that I had to solve and that restricted me when it came to feedback were due to technical issues and not so much to tactics" (Informant 4).

These perceptions could be influenced by the future teachers' expectations about the level of the student body at the beginning of the TU. The students' lack of technical skills did not necessarily imply their lack of understanding of the objective or the result. Therefore, the tasks' objectives may have been achieved. However, it is important to know the students' characteristics well before implementing a student-centered teaching model. In line with previous studies, very high expectations of success when first implementing it should be avoided (McNeill et al., 2004).

Likewise, the lack of familiarity with this pedagogical model was also evident in the students' responses when they received interrogative feedback. In general, the informants pointed out that the students were not used to answering questions during PE classes or to interrupting the game to reflect:

> "They weren't very accustomed [to interrogative feedback]. So, when I raised a reflection or a question, they were quiet, and I noticed that they would say, "Why do you ask this?" (Informant 3).

> "It was a bit strange because they were not used to being interrupted and, as they got the hang of it quickly, they just wanted to go on playing, and when I interrupted them, I saw that so many interruptions bothered them" (Informant 3).

Not paying attention to the questions, not answering immediately, or answering with short replies are common behaviors among students unfamiliar with interrogative feedback (McNeill et al., 2004). This could trigger teachers' feelings of frustration, especially in pre-service teachers who are still in training. To encourage student participation, teachers could pose questions in small groups, provide more personalized feedback, and ask questions based on situations that occurred during the most recent tasks. Encouraging students to understand the objective of the questions could also enhance their responses, as well as their reflection (McNeill et al., 2004). However, it was observed that the students did not understand the interruptions, and, in line with previous studies (Bracco et al., 2019), they were reticent when the game was constantly

interrupted. This could be due to their lack of familiarity with TGfU (Silva, Farias & Mesquita, 2021). Students' familiarity with TGfU and their autonomy should be taken into account. Thus, depending on their experience with TGfU, it is recommended to adapt the frequencies of interruptions to provide interrogative feedback, as these could positively or negatively influence students' motivation during PE classes (Bracco et al., 2019).

Difficulties Perceived by pre-Service Teachers Related to the use of Interrogative Feedback During the TU

One of the difficulties perceived by future teachers was the complexity of giving high-quality interrogative feedback. To deal with this difficulty, the informants explained that they prepared the questions they were going to ask during the tasks they had designed:

> "In my case, I had a list of things that you could address, or problems that could crop up, depending on whether the exercise and the TU moment were focused on one or another aspect of the internal logic. I would prepare a couple of examples of each topic. But, above all, I didn't want a very closed schema, because otherwise, I might lose too much information" (Informant 4).

Given that interrogative feedback is one of the fundamental elements of TGfU (García-López & Gutiérrez, 2017) , a common behavior among pre-service PE trainees is to design questions in advance to feel more confident (McNeill et al., 2004). Other strategies, such as designing initial questions based on prior learnings or situations or recording sessions using interrogative feedback and subsequently viewing them, could also enhance students' reflections and improve the quality of the feedback provided by the teachers (Cazden, 2001; Harvey & Light, 2015) .

A common mistake made by pre-service trainees when using feedback is not allowing students enough time to answer the questions (Harvey et al., 2015). In other cases, when the pre-service teacher receives an erroneous or different answer than the one, they were seeking, they would ask different questions about the subject instead of rephrasing the initial question:

> "I tried to keep them [the questions] as short as possible. Maybe that's why— because I was in a hurry—I didn't give them enough time to think and respond" (Informant 1).

(Vickers, 2007) suggested that two minutes of discussion time with the students could be enough to make them reflect on the problems posed. In line with previous studies, the interrogative feedback should be adapted to the students' experience and needs, the teaching stage, or the task's objective. Not offering enough time to practice the task could trigger negative consequences such as a lack of motivation and commitment to the PE session (Harvey & Light, 2015) .

To avoid constantly interrupting the game, the informants commented that they preferred to let the students practice the task and would interrupt it only in specific situations, when the students were far from achieving the objective. As a strategy, they froze the erroneous situation and based on that, they used interrogative feedback:

> "From the first day, I saw that it was something they were not used to, and when I interrupted them, they were unhappy because they wanted to continue playing. Well, although they didn't know the objective, I let them practice a little more, but if I saw that they didn't practice it [correctly], I would interrupt them. Not wanting to stop them, I tried to let them practice a little, and even so, I made short interventions to avoid limiting the class dynamics and allow them to continue practicing" (Informant 3).

One of the complex aspects of interrogative feedback is the moment when it is used. Depending on the purpose of the feedback, the nature of the task, generalization of the error, and the stage of learning, teachers may use different strategies (Harvey & Light, 2015) . For example, they could interrupt the game at a crucial moment, pose a question, and give students time to discuss the solution and practice it. However, depending on the students' autonomy, the teachers could choose not to interrupt the game and instead give feedback to one student from each team. This student would then return to their team and pose the question to their classmates to find a joint solution.

Difficulties Related to the Design of the Sessions During Their Implementation

Despite previously designing the TU and anticipating possible difficulties, the participants had to improvise adaptations during the sessions to adjust them to the students' needs. As Informant 3 states, the TU he had designed was mostly made up of representation games, in this case, providing the material:

> "At the beginning, I worked more on the pass-catch, so that they could get 'X' number of passes by changing the material. Instead of working with handballs, which may be larger and harder, I used smaller or softer balls to work on the pass better" (Informant 3).

Representation games allow for the reduction of some structural elements, such as space, material weight, and player involvement, which, in this case, enabled easier ball reception and/or more accurate passing (García-López & Gutiérrez, 2017) . However, despite decreasing or increasing the difficulty of the tasks, pre-service teachers had to adapt these games to the needs of some students:

> "During the practices, I had to modify somewhat the sessions I had already prepared. (...) Apart from the previous work of designing the session, as the TU progressed, I had to modify the exercises of some sessions" (Informant 3).

> "I even had to spontaneously modify the same session in different groups because some things that had not gone as I expected, or I realized I could make the most of it" (Informant 4).

Due to the high ratio of students per class, it is common to find students with different levels of ability. To ensure all of them can execute the tasks successfully, the tasks must be adapted throughout the sessions. This could generate insecurity or anxiety among pre-service teachers due to the uncertainty of the situations (Díaz-Cueto et al., 2010). Adapting tasks to students' needs could promote students' perception of competence, and at the same time, enhance positive experiences during PE classes (Bracco et al., 2019; Diloy-Peña et al., 2022).

Regarding the number of sessions to be carried out during a TU through TGfU, the informants pointed out that designing TUs with more sessions could help students to internalize the concepts better:

> "I had 10 sessions and I think it was enough. If I had had more, then I would have delved into something that they had not internalized or some more specific aspect" (Informant 3).

> "[10 sessions] were enough, because there was time to do everything with no problems, but perhaps with a couple of more sessions, they would have enjoyed it more, and I would have finished understanding it without any problems" (Informant 2).

The study informants conducted 10 sessions. Regarding the appropriate number of sessions to be performed in the TGfU, recent studies showed that, on the one hand, longer TUs (e.g., 18 sessions) allowed students to increase their cognitive development and fun during PE classes (Silva et al., 2021; Wang & Ha, 2013) and, on the other hand, this favored their perception of their teachers' competence through the effective implementation of the model (Silva et al., 2021). Therefore, whenever possible, it is advisable to carry out more than 10 sessions to guarantee quality learning.

Lack of pre-Service PE Teachers' Theoretical Knowledge and Real Practical Experiences in the Implementation of TGfU

Pre-service teachers begin their practicum period in the second semester of the academic year. In other words, they had already completed at least 60% of the theoretical content of the Master's Degree in Teaching. However, the participants stated that, although the Master's degree provides them with the theoretical foundations to develop TUs, they had to seek more information related to TGfU to complement their sessions:

> "The university provided a good knowledge base, which can always be used to design the TU, but if you want to do it moderately well... in my case, I had to seek more information" (Informant 3).

> "We worked a lot on this model, and they provided an important basis of how it should be, how to approach it. But now I lacked something else to help me with that sport" (Informant 1).

In the same line as (Valério et al., 2021), the teaching-learning process of the theoretical contents of the pedagogical models seems to be sufficient to design the TUs. However, in terms of practical content, the informants perceived difficulties when implementing it because the practical classes they had received in their Master's training were far from the reality they encountered in the educational context of Secondary Education:

> "You possess the knowledge but putting it into practice in university situations is not the same as in real teaching situations" (Informant 3).

> "(...) But yes, it is true that no matter how much theory you know, later on, putting it into practice..., well, everything is a little more difficult. And I also believe that as you gain experience, you seek whatever is useful in that aspect" (Informant 2).

In this sense, it is important that during initial training, pre-service teachers can apply student-centered models during their practicum and receive support from university academic tutors or the educational center itself, if they have experience (Silva et al., 2021; Stolz & Pill, 2014). This could help them overcome some difficulties encountered in practice, as mentioned above, and achieve a more effective implementation of TGfU.

Limitations and Prospects

Although the results represent an advancement in improving pre-service PE teachers' training, some limitations and prospects should be considered. Firstly, although the small sample size is consistent with the methodology used (i.e., qualitative), there were only male informants because only these students had implemented a TGfU-based TU. Future studies should include the same number of male and female pre-service teachers so that the results could be more transferable. This could help to analyze different perceptions according to gender. Secondly, the focus groups were held online because, on these dates, some of the future teachers were not in the city where the Master's degree was being taught. This may have made it difficult to create a trustworthy and secure environment. However, the interviewer used strategies (i.e., initial relaxed presentation, going from general to specific questions, summarizing the main perceptions at the end of the focus group, and redirecting the questions to the topic under discussion), which enabled achieving great depth in the responses. However, given the limitation of the academic year of the Master's Degree in Secondary Education Teaching (9 months), no further focus groups could be held. Thus, whenever possible, it is advisable to carry out another focus group during the implementation of the pedagogical model. We propose conducting studies that analyze students' perceptions before and after implementing a TGfU-based TU, enabling a comparison and a comprehensive understanding of the perceptions of both protagonists in the teaching-learning process. Thirdly, it would be relevant to conduct a study using a mixed methodology to analyze the motivational consequences perceived by students after implementing a TGfU model. Through the use of both methodologies, higher-quality intervention programs could be designed to promote active lifestyles among adolescents.

Conclusions and Educational Implications

This study presents the expectations and difficulties perceived by four pre-service PE teachers after their first experience with TGfU in a real educational context. Summarizing the initial expectations, these four pre-service teachers hoped that applying the model would improve their students' tactical understanding of the internal logic of sports, and, consequently, that the learning gained could be applied to other PE content. In addition, they hoped that the implementation of TGfU would generate positive experiences among the students, favoring future adherence to the practice of PA outside of school hours. They also pointed out that, compared to a technical-traditional teaching model, they had to invest more time in designing the TU, partly due to their lack of experience with the model and the profession. Before the implementation of the TU, they were concerned about the development of interrogative feedback and the lack of control over the situation, which was always triggered by their inexperience with the model (e.g., teachers' and students' lack of experience).

Once the TU was implemented, pre-service teachers pointed out some difficulties. Firstly, the participants perceived students' low familiarity with TGfU, which affected the development of interrogative feedback, as the students were not accustomed to reflecting and making decisions. To enhance students' familiarity with interrogative feedback, teachers could ask questions related to specific situations (e.g., freeze moments) and task objectives, and also ask questions in small groups to promote individual feedback. Furthermore, the students were not used to the trainee teachers constantly interrupting

the tasks to give feedback, which may have led to their boredom. Therefore, teachers should consider the frequency of interruptions, the importance of the errors in relation to objectives, and the students' needs.

To overcome the difficulties perceived by pre-service teachers in the use of interrogative feedback, they designed possible questions to be asked during the tasks before the sessions. However, this strategy was not effective, and it is suggested to include additional methods, such as recording the sessions and their subsequent viewing, and posing open questions related to previous learnings. To avoid reducing the students' time of motor commitment and motivation during the sessions, it is recommended to interrupt the exercises to give feedback only when it is essential.

The pre-service teachers pointed out difficulties related to the design of the sessions and the TU. During the sessions, they adapted the tasks according to the students' needs, improvising adaptations related to the material and number of participants. Considering the future teachers' need to feel in control of the class, such improvisations could trigger insecurities. To facilitate adaptations in this type of situation, getting to know the students in depth (e.g., maintain the same group-class during the two internship periods of the Master's Degree) may prevent this insecurity. Finally, although the informants pointed out that 10 sessions were sufficient, they also thought that a slightly longer duration could have allowed the content to be taught more tranquilly.

Finally, although during the Master's Degree, pre-service teachers receive theoretical content about TGfU, it does not seem to be enough for them to feel fully competent in applying it in a real context. Therefore, incorporating into training programs scenarios where future teachers can simulate TGfU-based learning situations could provide them with more resources and tools to adapt the designed tasks to the reality of the classroom.

Ethics Committee Statement

Not applicable. The participants signed an informed consent form to voluntarily participate in the study.

Conflict of Interest Statement

Authors declare any existing conflicts of interest.The funding institutions had no influence on the study design, data analysis, or interpretation of the results.

Funding

This study has been funded by the Government of Aragon and is framed within the activities of the EFYPAF research group (Research Group on Physical Education and Physical Activity Promotion, code: S17_23R).

Authors' Contribution

Conceptualization M.S., S.D, A.A., L.G., & J.G; Methodology M.S. & I.N; ; Software M.S. & I.N.; Validation M.S. & I.N.; Formal Analysis M.S. & I.N.; Data Curation M.S. & I.N.; Writing – Original Draft M.S., S.D., & J.G.; Writing – Review & Editing M.S., S.D, A.A., L.G., & J.G .; Supervision S.D, A.A., L.G., & J.G; Funding Acquisition M.S., S.D, A.A., L.G., & J. GAll authors have agreed the final manuscript.

Data Availability Statement

The data that support the findings of this study are available on request from the corresponding author [msanzr@unizar.es]

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