

Article

The Flipped Classroom and the Development of Competences: A Teaching Innovation Experience in Higher Education

Verónica Sevillano-Monje ¹, Ángela Martín-Gutiérrez ^{1,2} and Carlos Hervás-Gómez ^{3,*}

¹ Department of Theory and History of Education and Social Pedagogy, University of Seville, 41013 Seville, Spain; vsevillano@us.es (V.S.-M.); angela.martin@unir.net (Á.M.-G.)

² Department of Education, International University of La Rioja (UNIR), 26006 Logroño, Spain

³ Department of Didactics and School Organization, Faculty of Education, University of Seville, 41013 Seville, Spain

* Correspondence: hervas@us.es

Abstract: Because of the changes in society, the educational scope must implement teaching–learning methodologies that help students to develop the competences that will be necessary in their academic–professional journey. This study presents a teaching innovation experience that is based on the flipped classroom methodology, which was carried out with 136 students (academic year: 2019–2020) in the subject of “Theory and History of Physical Education, Physical Activity and Sport” of the degree of Physical Activity and Sport Sciences of the University of Seville. The methodology of the study combines qualitative and quantitative approaches (mixed methods) through a pre-experimental design. The results show that there were significant differences in the acquisition of knowledge after the application of the methodology, which had a significant impact on the students’ competence levels. Moreover, the students presented high levels of satisfaction in different areas. This allows for the conclusion that it is important for this methodology to continue in later courses, given its contribution to the competences that are related to the formal aspects and that are linked to research and organisation. Recommendations for practice are presented at the end of this article.

Keywords: flipped classroom; competences; university teaching; teaching experience



Citation: Sevillano-Monje, V.; Martín-Gutiérrez, Á.; Hervás-Gómez, C. The Flipped Classroom and the Development of Competences: A Teaching Innovation Experience in Higher Education. *Educ. Sci.* **2022**, *12*, 248. <https://doi.org/10.3390/educsci12040248>

Academic Editors: Katerina Tzafilkou, Anastasios A. Economides, Maria Perifanou and Federico Corni

Received: 29 December 2021

Accepted: 28 March 2022

Published: 30 March 2022

Publisher’s Note: MDPI stays neutral with regard to jurisdictional claims in published maps and institutional affiliations.



Copyright: © 2022 by the authors. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<https://creativecommons.org/licenses/by/4.0/>).

1. Introduction

Because of the climate of concern that has been caused by the rapid and constant changes that society has been subjected to, the educational scope must develop new approaches and propositions in the strategies and methodologies that are used by educational institutions. An educational institution is a “a scenario of social life”; that is, there is a direct relationship between society and education and, thus, what happens in one sphere affects and modifies the other [1].

This socio-educational relationship (between institutions and society) must facilitate, firstly, the education of students in terms of the necessary skills, abilities, and competences that they need to thrive and succeed in the job market, which is becoming increasingly complex and unstable [2]. There is a disconnection between the school and the job market [3]; therefore, young people are not ready for the latter when they leave the education system, and they do not know the characteristics of the job market. Educational institutions are still dissociated from this reality, which creates a large gap in the education of students.

Secondly, the socio-educational relationship must also facilitate the level transitions of students (e.g., from high school to university). Currently, first-year university students do not have certain skills, such as how to perform a literature search on primary and secondary sources, reading comprehension, information synthesis capacities, or the ability to paraphrase, cite, or organise ideas in a concept map, etc. In the stages of secondary education and A levels, students are required “to understand and adequately use the propositions of other authors . . . and, at the same time, to express their ideas using their

own words" (p. 16) as an anticipatory step to prepare for the tasks that they will be required to perform in higher education. However, this is not the reality that we are living nowadays [4].

University students do not have the competences that are linked to research and enquiry [5]. These authors highlight three fundamental skills or abilities in the context of higher education that today's students have not acquired: (a) The ability to reliably search for scientific information in databases; (b) The ability to synthesize such information in a genuine report by following a set of academic writing rules; and (c) The ability to orally present the results in front of a group of people within a specific timeframe and format.

Therefore, faculty members must not reproduce the same educational patterns that these students have had throughout their academic lives. On the contrary, students must be exposed to learning scenarios that help them to acquire those competences that will be of relevant use in their academic and professional journeys. Thus, it is fundamental to revise and renew the methodologies and strategies that are used by the faculty in order to respond to the needs of the students and their environment in order to generate meaningful and contextual learning with the application of active methodologies that favour their integral development (at the personal and professional levels) [6].

From this idea, after two years of experience teaching the subject of "Theory and History of Physical Education, Physical Activity and Sport" at the first year of the degree in Physical Activity and Sport Sciences (PASS), the faculty members decided to make significant changes in this subject. With the aim of reversing this reality, and following the proposition of Adams-Angulo (2012) [7] with regard to the perception of students toward meaningful didactics with respect to master lectures, the faculty members decided to shift from a traditional methodology to active learning methodologies. Students are more eager to participate in these types of methodologies [8].

To this end, we chose the flipped classroom as a methodological alternative in order to develop the cross-sectional competences and increase the satisfaction of the students. The flipped classroom, with its student-centred methodology, allocates more classroom time for high-level concepts and for more practical experiences, and it allows the students to follow the lectures at their own pace [9,10]. Similarly, the literature shows that students value this methodology to a greater extent with respect to other methodologies [11]. In this method, the students are required to search the topics that are addressed in class, in order to understand what they read, to select and synthesise information, to take notes using their own words on the basis of quality sources, to relate concepts and ideas, and to find differences and similarities.

The present study gathers the experience of this methodological change, and its influence on the acquisition of knowledge, the development of key competences, and the satisfaction of students, with the additional characteristic that it was carried out during the COVID-19 pandemic.

1.1. The Teaching–Learning Process and Active Methodologies

On the basis of the curriculum of the stage of early childhood education [12] and of teaching–learning processes, when they begin their educational journey, students start to prepare in three fundamental areas: self-knowledge and personal autonomy; knowledge of the environment; and languages, communication, and representation. These work areas, and the dynamics that are established by the teachers, provide the students, from early ages, with the skills and abilities that will allow them to make decisions, to participate, to accept and respect rules, to reflect and be critical, to interact and communicate with others (listening, empathising, expressing themselves, etc.), and to understand the situations around them. In the stage of early childhood education, the basic competences are transcended for the attainment of the key competences [13].

However, when these students enter the next educational stages (primary education, secondary education, A levels, and vocational training), these areas begin to lose relevance in the curricula and in the practice of educators. The working sessions at school stop

favouring the creativity of the students, the different interaction spaces of the classroom disappear, and the students are homogenised, despite representing diversity. This is reflected by master lectures, limited resources (textbooks, explanations in PowerPoint, digital blackboards used as projectors, etc.), and by the role of the teachers as instructors, and that of the students as receptors of information. In the early stages, teachers tend to use active methodologies with their students, whereas, in the later stages, they usually carry out a traditional methodology [14].

What is the cause of this situation? What is happening? Some methodologies are so routed in certain educational stages, such as working in groups and project-based work in early childhood education, that they hardly reach other educational stages [15]. From this point of view, it may be necessary to establish new methodologies that are based on the same principles as the existing ones so that they can settle in further stages (primary education, secondary education, A levels, vocational training, and higher education), thus moving away from the traditional methodology that contributes very little to the integral development of students.

Thus, it is necessary to change the methodological propositions in higher education, since students who arrive at university need to have effective and meaningful learning experiences that provide them with feedback.

The implementation of the European Higher Education Area (EHEA) has already involved all faculty members in a methodological change that is focused on the learning process of the student [16]. Previous studies [17–23] show that the aim of this change of methodology is to encourage students to value their participation in the learning process and to self-regulate the latter, thereby improving their motivation and interest in the contents. Likewise, this leads to a more effective use of the time spent inside and outside the classroom, which allows for delving into more complex aspects of the contents, and to better valuations of the subject by the students.

Moreover, on the basis of the experience of Pires and Yanes (2013) [24], we believe that the design of innovating methodological strategies in the teaching of the study subject may improve the results, interest, motivation, and critical thinking of the students. In this line, Adams-Angulo (2012) [7] states that students have more positive opinions about those meaningful didactics in which they engage, and when they develop the thematic contents by themselves, compared to through the master lectures, which do not facilitate the significance of knowledge.

Table 1 gathers some of the active methodologies for learning in the university scope.

Table 1. Active methodologies for learning at university.

Active Methodologies	Characteristics
Service Learning	This is one of the most recurrent methodologies in universities in recent years, given the need to link university studies to the job market. Ferrán-Zubillaga and Guinot-Viciano (2012) [25] highlight this methodological strategy for allowing students to “apply what they learned in their academic education with the experiences that they will have in certain job positions” (p. 188). In this way, social, business, and environmental institutions collaborate in the education of university students by making them capable of acquiring meaningful learning.
Cooperative Learning	To understand this methodology, we must differentiate it from collaborative learning, which is based on establishing (voluntary) links between two or more people/groups with the aim of helping some of the parties to achieve their goals. However, in cooperative learning, the participants aim to attain a common goal through dependency relationships and by playing different roles that amplify the potentials of the group to meet the set objective, which additionally helps them to develop cross-sectional competences [26].
Case Study	Walker (1983) [27] defines this technique in a very simple manner: “Case study is the analysis of an example in action” (p. 43). In this sense, the students learn through exposure to close, meaningful, and contextualised situations, to which they must respond after an analysis and evaluation of the proposed scenario.
Learning Communities	This is a methodology that emerged from the view of educational institutions as open to the community. Buitrago and Fajardo (2019) [28] defined learning communities as educational scenarios where pedagogical practices are developed beyond the acquisition of abilities and academic skills by the students; that is, they allow the latter to develop cooperative competences that are linked to the society of they are part.

Table 1. Cont.

Active Methodologies	Characteristics
Flipped Classroom	This methodology begins with tutorials, videos, and interactive material that are offered by the teachers to the students. The latter familiarise themselves with the notions to be worked on with the audiovisual material, and then, in the classroom, they carry out consolidation, doubt-solving, and collaborative tasks [29].
Learning Contract	This is an agreement, or negotiation, that is established between the teachers and the students. The involved teachers assume the role of facilitators/guides, whereas the students commit to and take responsibility for building their own learning [30]. This methodology allows the students to be autonomous, to be responsible for their own learning, to be motivated, to be capable of making decisions, as well as to develop their critical and self-reflective thinking, etc. [31].
Project-Based Learning	Authors, such as Jiménez (2018) [32], describe this methodology as a systematic process that the students initiate and conclude autonomously by solving those inconveniences that may appear throughout the realisation of the project, with the counselling of the teacher.

Note: developed by author from the cited authors.

The flipped classroom model has been revolutionising the scope of higher education in the last few decades because of the application of mixed-teaching models, which help to optimise the teaching–learning experience [25,33].

1.2. Key Competences for Learning throughout Life

According to Vasilchenko et al. (2018) [34], because of the changes in the current world, formal education is faced with the challenge of endowing students with a complete set of the knowledge, skills, and competences that they will need to successfully compete in the future job market. Therefore, the role of universities is increasingly shifting toward the provision of an environment in which students have the chance to acquire permanent learning skills [34]. Thus, acquiring competences in the scope of education is almost impossible without practical knowledge since theoretical knowledge is not enough. The university system of the EHEA set the foundation for the development of competences in students, with the aim of training competent people (that is, people who are capable of not only accumulating knowledge, but also of transmitting and applying it for a specific working purpose [16]) in order to respond to the challenges of society.

What are the key competences for personal development, active citizenry, social inclusion, and employment? According to the recommendation of the European Parliament and Council [35], such competences would be: communication in native and foreign languages; mathematical competence and basic competence in science and technology; digital competence; learning to learn; social and civic competences; a sense of initiative and the spirit of enterprise; and, lastly, cultural awareness and expression.

In this line, the European curriculum also contemplates a series of personal abilities and competences, including social skills (personal capacities in terms of communication and teamwork), organisational skills (e.g., the project coordination capacity), and digital and cross-sectional skills (which reflect the professional behaviour and integrate knowledge, aptitudes, and cognitive attitudes) [36].

The specific competences of the subject that was selected for this study comprise fundamental conceptual skills, while rather disregarding the procedural and attitudinal competences that the students must develop throughout their university education. This idea is shared by Estriagana et al. (2019) [37], who demonstrate that the acquisition of competences in the framework of higher education qualifications was not quite in line with the academic results that were measured in the evaluation processes of the subjects. To overcome this problem, the faculty members that were involved in this experience decided to change the methodology in order to allow the students to develop true specific competences that were linked to their professional profiles.

Therefore, universities must develop the so-called “soft skills”, in addition to the specific knowledge and skills of each discipline, in order to train employable graduates [38]. Recent studies reveal that, currently, employers consider these skills to be more important than professional knowledge and hard skills [36], as the latter are viewed as insufficient for professional success on their own [38].

However, the development and learning of these competences are influenced by the attitudes, expectations, and predispositions of all the agents that are involved in the educational process, which includes students, teachers, institution managers, and employers [39]. Valūnaitė et al. (2019) [36] show that the development of these skills depends on both internal personal characteristics and external social factors.

In addition to these fundamental competences, and because of the current society, digital competences have become especially relevant with the establishment of remote education as a consequence of the world pandemic caused by COVID-19, and the social distancing that was imposed to reduce the spread of SARS-CoV-2. In this sense, numerous students of all educational levels have been affected during the pandemic by the access to the systems and methodologies that have replaced the face-to-face modality because of a lack of digital tools and because of family and personal contexts [40]. Recent studies state that active methodologies provide students with flexibility, free access to resources, interactive learning environments, etc., within their teaching–learning processes [41,42].

The implementation of technology requires educators who are trained with enough technological literacy, an adequate educational design that is adjusted to virtual environments, and a didactic planning and an educational platform, with resources and tools that enable evaluation [40]. In addition, other studies affirm that the teaching experience and other variables influence the skills that are required to develop the flipped classroom methodology successfully [43]. However, teachers and faculty members are not the only ones who must have these digital competences. The study conducted by Guillén-Gámez and Perrino (2020) [44] shows that students of PASS have medium-low levels of self-perception with respect to their levels of digital competence, which is insufficient to meet the educational demands. These authors highlight that a predisposed attitude toward ICTs is not enough and that, therefore, it is necessary to truly incorporate such technologies into university education through mastery and procedural skills.

University students perceive ICTs as a learning-and-updating resource, especially in educational processes [45]. However, the authors show that most students do not receive specific training and that, therefore, they are self-learners, with medium-low competence levels. This situation became more evident during the COVID-19 pandemic, where there was a digital divide with regard to Internet access among students, and the need for new organisational and didactic strategies for learning in digital environments [40].

2. Methodology

In the last few decades, new propositions have emerged in terms of the way to approach teaching and address the content in the classroom, which has given rise to methodologies in which students must carry out certain anticipatory work in their homes. This first contact is made autonomously through text reading, videos, and/or digital material, with previous tasks adjusted to each level and course. This gave rise to the so-called “flipped classroom” methodology, in which, from tutorials, videos, and interactive material, the students conduct their approach to the notions, and then, in the classroom, they carry out consolidation, doubt-solving, and collaborative tasks [29].

Consequently, the objectives of this study were:

- Objetive 1. To discover whether there are significant differences in the acquisition of knowledge among first-year students of the subject of “Theory and History of Physical Education, Physical Activity and Sports” of the degree of Physical Activity and Sport Sciences at the University of Seville (Spain) after the application of the flipped classroom methodology;
- Objetive 2. To analyse the impact of the methodology on the competence levels of the students;
- Objetive 3. To determine the satisfaction of the students with such a methodology.

To this end, the present study is based on a mixed methodology that combines quantitative and qualitative approaches. As in the study of Hidalgo et al. (2021) [46], a pre-experimental design was applied, which gathers the quantitative data at the beginning

and end of the subject. The study hypothesis states that, in the context of the subject, the applied methodology influences the acquisition of knowledge and the development of the research competences in the students.

2.1. Participants

The sample consisted of 136 students of the 150 that were registered in the subject of “Theory and History of Physical Education, Physical Activity and Sport” of the first year of the degree of Physical Activity and Sport Sciences at the University of Seville (Spain). These students participated in the study voluntarily, before and after the application of the flipped classroom methodology.

With regard to sex, 43.38% of the sample were women, and 56.62% were men, with a mean age of 19.9 years. A total of 97% of the participants accessed the university through the baccalaureate and the university admission test. Only 10% of the participants had jobs during the realisation of the study.

2.2. Techniques and Instrument

To respond to Objective 1, a Kahoot (online questionnaire that allows for creating a ranking among the students) was performed, with the aim of testing the previous knowledge of the participants. The Kahoot consisted of 15 questions, of which 7 were true-or-false questions, and the other 8 were multiple-choice questions with one possible answer. The questions were basically focused on the concepts and data of the content of the subject matter.

With regard to the key competences that are referred to in Objective 2, an evaluation on a scale of 1 to 4 (1 = very unsatisfactory/very inadequate; 4 = very satisfactory/very adequate). Specifically, the questionnaire is divided into four sections, which comprise the valuation about the change in the teaching methodology; the development of the theoretical credits; the development of the practical credits rubric was designed and applied in the correction of the practical credits. This rubric contains indicators that are related to formal aspects (written expression, spelling and grammar, academic format, correct use of Spanish and English, meeting deadlines, etc.), research (theoretical framework elaboration, database management, citation and references following the rules of the American Psychological Association, analytical skills, etc.), and organisation (time and activity planning and management, role distribution, function assumption, established commitments, etc.).

To respond to Objective 3, an ad hoc questionnaire was created to determine the satisfaction of the students with the teaching methodology that was applied. The instrument consisted of open-ended and Likert questions, with the latter being; the teaching quality; and the adaptation to the situation caused by the COVID-19 pandemic. The open-ended questions asked the students which theoretical or practical contents were considered most adequate, as well as about the strengths and improvable aspects of the teaching of the faculty members that were involved in the subject. The Likert questions referred to the general valuation of the theoretical and practical credits, and to the general valuation of the teaching and specific aspects of it (preparation and organisation, timing, compliance with the programme, content management, etc.). The students were also asked to express, through these questions, how they would assess the teaching that was adapted to the situation caused by the pandemic in terms of the communication system, the attention received, and an evaluation of the theoretical and practical credits.

2.3. Data Analyses

For the analysis of the quantitative data, descriptive analyses and inferential statistics were used in order to test the research hypotheses. The statistical techniques that were used were percentages and Wilcoxon’s nonparametric test for statistical contrast, which established the confidence level at 95% ($p = 0.05$). SPSS vs. 26 software was used for these statistical analyses. Nonparametric tests were selected because the data do not follow a normal distribution.

The qualitative data were organised from the thematic analysis [47]. Firstly, the topics were identified and analysed from the patterns that repeated in the dataset; then, the information was coded by following the indications of Gibbs (2012) [48]. The statistical software, Aquad 7, was used for this statistical process.

2.4. Information Process and Didactic Material of the Experience

On the basis of the study of Vázquez-Mirez et al. (2020) [5], and with the aim of promoting the competences that are linked to research and enquiry, two theoretical seminars were taught on how to find and use different history manuals, how to adequately cite according to the APA method (American Psychological Association), and how to elaborate one's own notes from the introductory explanations and the reference manuals available. All of the materials that were used for the seminars are part of the resources that are offered by the Library of Education Sciences of the University of Seville. All of this was carried out in order to train and inform the students in the competences that they did not possess when they arrived at university, despite their essential nature.

Certain phases of the learning process were performed by the students outside of the classroom through the use of different digital resources, in order to use the time inside the classroom to foster and increase the acquisition and application of new knowledge with the support of class discussions [49]. Reidsema et al. (2017) [33] offer a series of recommendations to introduce the flipped classroom into our classrooms:

1. **Vision.** As an introduction for each block of contents, the students were offered illustrative Youtube videos that were between 5 and 15 min in length, with the aim of contextualising the students into the historical moment, so that they could subsequently make sense of the sports that were practised in each period. In addition to the illustrative videos, the students were provided with video tutorials that were created with Blackboard (the virtual platform of the University of Seville), where they could view a virtual room that included the PowerPoint presentations with the key ideas, while the faculty members explained these ideas. The students had at their disposal a video tutorial for each of the blocks of contents;
2. **Activities.** In this phase, in order for the viewing of the videos to be effective, the students had the support and explanation of Cornell's method to gather the information that they deemed necessary from the videos. This technique allows for taking notes on a sheet that is divided into three columns or files (ideas, classroom notes, and summary) [50];
3. **Synthesis.** The session begins with a few minutes during which the teacher can do a Kahoot or a similar activity that was previously elaborated in order to initially evaluate whether some type of learning has taken place in the students after watching the video. This type of activity, along with the doubts and enquiries that are expressed by the students in these first minutes, allow for an assessment of the efficacy of the video, whether modifications are needed, or whether a new video should be proposed in order to clarify the concepts. Then, the students perform previous tasks or activities that are linked to the content blocks in order to assess their previous competences;
4. **Implementation.** Once the doubts of the students are clarified, a task or activity is proposed (similar to those previously applied), in which, through experimentation, enquiry, and even manipulative work, the students create, review, and consolidate the concepts that they worked on, and always from the most constructivist approach possible. One of the activities that was proposed to the students consisted of watching films and reading articles that were related to the historical periods that were tackled in the subject, where the students could identify the educational and sport aspects and could relate them to the key ideas of the topics that they had viewed in the video tutorials. An example of this is found for the film, 300, which reflects the conception of sport in Sparta. Once all of the resources that were provided by each thematic unit had been viewed, the Kahoot that was performed at the beginning was repeated, so that

both the faculty members and the students could compare the learning results that were obtained during the teaching process.

The student satisfaction questionnaire was administered online through the Google Forms application. The link to the questionnaires was sent through the Blackboard platform of the University of Seville, before publishing the final marks of the subject.

3. Results

Throughout the development of the subject and based on the flipped classroom methodology, a holistic approach was used, in which we did not distinguish between the theoretical and practical contents. However, the study plans of university degrees gather this differentiation. This is why the students were given a test: in order to determine the acquisition of the minimum contents (70% of the subject) and the minijobs (30% of the subject).

The evaluation of the theoretical credits consisted, according to the teaching project, of a 2 h face-to-face test of 10 open-ended questions. Because of the world pandemic caused by COVID-19 and the consequent lockdown, the faculty members had to adapt the classes and evaluation to perform them online through the Blackboard platform of the University of Seville. To this end, a set of questions was prepared, with a total of 4 essay questions, 14 short-answer questions, 5 correspondence problems, and 19 true-or-false questions. The students had to answer two essay questions (2.5 points each), three short-answer questions (1 point each), one correspondence problem (1 point), and five true-or-false questions (0.2 points each), which were generated randomly. The students had 90 min to complete the test within a timeframe of 12 h. The great availability of access to the online evaluation was justified by the fact that some families only have one electronic device for all the members of the house in this situation of telecommuting and teletraining that is due to the pandemic. The construction of the answers through the elaboration of the study materials was taken into account.

After the test and the publication of the marks, the students could request an individual revision by video-call with the faculty members. It is worth mentioning that there was also a previous simulation to correct those mistakes that occurred during the evaluation as a consequence of not knowing the platform, or that occurred in the completion of the form, among others.

With respect to the evaluation of the practical credits, as is described throughout this study, these credits were based on the individual and group productions, in which the theoretical contents that were tackled in the subject were put into practice: analyses of films (e.g., 300); scientific articles and historical texts; and the finding and descriptions of artistic productions of all time periods with regard to sport, etc. After the imposition of the state of alarm and the lockdown, the schedule for the submission of the online assignments was maintained, which increased the individualised follow-ups of the students by the faculty members through different sessions and via e-mail, with the subsequent revision of the assignments through individualised video-calls.

Next, the results of this study are presented in relation to the three objectives that were proposed.

3.1. Acquisition of Knowledge by the Students before and after the Application of the Methodology

With regard to the acquisition of knowledge by the students before and after the application of the methodology in the different blocks of the subject, it was concluded, with a 95% confidence interval, that there were significant differences between the acquisition of knowledge before and after the application of the flipped classroom methodology. This assertion was corroborated with the Wilcoxon's test ($p = 0.000$; $Z = -7.280$).

Figure 1 presents an example of the results of the Kahoot that was conducted on the contents of sport in Greece. With regard to the percentage of right answers in the first Kahoot, the students obtained a percentage below 84%. The item with the highest score was Item 13, with 83.95%, which was followed by Item 14, with 81.48%. On the other hand,

the item with the lowest percentage of right answers was Item 11, with 18.52%. However, the percentage of right answers in the second Kahoot (i.e., after viewing the videos) was significantly higher. In Figure 1, the item with the lowest percentage of right answers was above 60% (Item 11, with 61.73%), and the item with the highest percentage of right answers reached 96.30% (Item 3).



Figure 1. Percentages of right answers in the first and second Kahoots.

As can be observed in Figure 1, Item 9 (“The agoge refers to . . .”) and Item 14 (“Pre-military training hardened in Sparta after the separation from the rest of the polis”) obtained very similar scores in both the first and second Kahoots (79.01 and 80.25%, respectively, for Item 9, which was a multiple-choice question with one correct answer; and 81.48 and 82.72%, respectively, for Item 14, which was a true-or-false question). We infer that the high level in the percentages of right answers in the two time points of data gathering are due to the fact that, during the viewing of the videos of this thematic unit, more attention was paid to Sparta, and the students assimilated, to a greater extent, the training of the hoplite in Sparta than they did the education of a citizen through the Paideia in Athens.

3.2. Impact of the Methodology on the Competence Levels of the Students

Once the doubts of the students were clarified, they had to carry out a research assignment through experimentation and enquiry in order to build, explore, review, and consolidate the addressed concepts, and always from the most constructivist approach possible.

Both inside and outside the classroom, the students conducted the research task in groups or individually through the reference manuals. Then, in the classroom, they jointly explained the contents that were found in the manuals. To settle the contents, association activities were conducted in the classroom with the aim of finding differences and similarities, relationships between the different historical periods, the evolution of a sport in the different periods, or the association of the contents of the subject with other subjects of the degree, and by making concept maps. In all the activities that were conducted, the students had to make use of the citations and references by following the APA system. One of these activities was to compare Spartan education with Athenian education by searching for the similarities and differences between them.

With respect to the impact of the methodology on the competence levels of the students, it was confirmed, with a 95% confidence level, that there were significant differences in the development of the competences between the previous activities and those that were performed after the application of the flipped classroom methodology. This assertion was corroborated with the Wilcoxon’s test ($p = 0.000$; $Z = -9.657$).

3.3. Student Satisfaction with the Flipped Classroom Methodology

The students valued the theoretical credits of the subject as adequate (48.4%) and very adequate (45.2%), and the practical credits as adequate (48.4%) and very adequate (41.9%).

With regard to the teaching quality of the faculty members, in general, the students considered it as very satisfactory (67.7%). In relation to the class preparation and organisation, most of the students (77.4%) stated that it was very adequate. The timing of the subject was also valued positively, as 54.8 and 38.7% considered it very adequate and adequate, respectively. In relation to the items about the compliance with the programme of the subject and the management of the contents, 61.3% of the students gave positive valuations for both items. The punctuality and attendance of both faculty members was also considered very adequate (87.1%), and their communication skills were valued as very adequate (48.4%), and adequate (35.5%). With respect to the materials and resources that were used in the classroom, these were considered very adequate in 54.8% of the cases. The same was observed for the pedagogical strategies of the faculty members, with 48.4%. Lastly, the attitude toward the students, the counselling and guidance, and the evaluation of their learning were scored by the students as very adequate (51.6, 58.1, and 64.5%, respectively).

3.3.1. Adequacy of the Theoretical Contents

Of all the students, 45.16% considered that all of the contents that were tackled in the subject were adequate, since they helped them to know and understand the evolution of sport throughout history: *"Each theme helps to understand the origin of sport and its evolution to date and shows that sport practice has always been present in society"* (Student 5).

Specifically, 19.35% of the students considered that the specific contents on the origin and evolution of sports were more adequate, as they were more interesting, whereas 16.13% of the students mentioned specific historical periods that were tackled in the subject because of their relationship with the present times: *"I think this is more adequate and interesting than other aspects, such as the stages and education itself, which I consider to be important, but not so much as the games"* (Student 124).

However, 12.9% of the students highlighted the contents of the autonomous learning and research as the most adequate, which was due to the theoretical learning that they acquired in the process: *"In my opinion, it is easier to assimilate certain historical information through audiovisual documents or with scientific texts that I have to work on autonomously"* (Student 58).

3.3.2. Theoretical Credits Evaluation and Revision System

The students highlighted that the theoretical evaluation test that was performed through the digital platform attended to the needs that could arise (access to the Internet, devices, timing, previous indications and simulations). Of all the students, 64.20% valued it as adequate. They considered that the evaluation system was adapted to both the unexpected circumstances and to the individual needs, as it established a long timeframe to carry out the evaluation test. However, they stated that the duration of the test should be longer because of the amount and the organisation of the questions. They also gave positive valuations to the fact of knowing in advance the date for the publication of the marks and for the revision of the test, as well as to the simulation prior to the official test: *"They told us the date on which they would give us the marks and the day when they could be revised, right at the end of the day of the exam"* (Student 17); *"I would only mention one drawback, but just for the sake of including one. Ninety minutes was a very short time for the realisation of the online exam"* (Student 115); *"Within the exceptional circumstances, I think that this was one of the few ways to evaluate the theoretical themes, and they managed to adapt to the circumstances appropriately"* (Student 89).

3.3.3. Adequacy of the Practical Contents

Of all the students, 35.48% considered that all the practical contents were adequate, and this was due to the fact that they were adjusted to the topics of the subject and that they helped them to research all the time periods: *"They were all necessary and represented the study topics very well, given the variety of the different time periods and the methodology used"* (Student 31).

Moreover, 48.39% of the students highlighted the first two minijobs as the most adequate practical contents, since they were more strongly related to the theoretical contents that were tackled in the class, and they allowed them to better acquire the knowledge through the viewing of scenes, and to develop study methods: *"The first one helps to capture contents based on the film and to learn in a different way"* (Student 131); *"The second one is very interesting with regard to the exam, as it asks the student to show differences and similarities, and the concept map is fun and it is something we all must be able to do"* (Student 106).

3.3.4. Practical Credits Evaluation and Revision System

With respect to the practical credits, the students expressed their satisfaction in 87.1% of the cases. They had opposing valuations with regard to the practical lectures of the subject. Some of the students had positive valuations for the demands, feedback, and scores of the practical lectures, while others considered that the content of the practical lectures should be more relevant in the total mark of the subject than the use of the APA system. Similarly, some students proposed a co-evaluation, in order to know the individual work. One student added that the practical credits should have greater marks because of the time that was dedicated to them: *"The evaluation was good, assigning good marks and motivating the students"* (Student 98); *"All corrections and marks were well justified"* (Student 102); *"A mark should not be assigned based only on citations if the content is adequate"* (Student 47); *"I think that the practical lectures are not relevant enough in the mark considering the time dedicated to them"* (Student 12).

3.3.5. Methodology

Of all the students, 87.1% gave positive valuations to the methodology that was used in the classroom (dynamics, resources, organisation, the promotion of participation, the continuous revision of the material, research in the classroom, and continuous feedback on the work conducted). Likewise, they highlighted the planning of the topics, the knowledge of the subject matter, the clarity of the explanations, and the method of engaging the students: *"I think that the work done in terms of complementing with the manuals is a great method, as we learned to search information adequately"* (Student 72); *"She explains very well, makes the students participate, listens to all students and helps to improve the learning of the student"* (Student 59).

3.3.6. Communication System and Received Attention

The students positively valued the communication system that was established with the faculty members involved and the attention received, as well as the availability of the faculty members through e-mail and announcements in the virtual platform, with all of the information organised well in advance. Most of the students (77.42%) pointed out that the actions that were carried out were very adequate. Moreover, the students explained that the communication was fluid, which was due to the promptness of the replies to the e-mails and the help that they received in attending to all of their doubts. Lastly, they considered that the communication was very adequate in comparison with that of other subjects: *"We are always informed about what was going to be done, with dates and everything, well in advance"* (Student 123); *"They always replied to all our e-mails with doubts, requests and clarifications quickly and clearly, leaving no doubt unattended"* (Student 83); *"I think this is the best I have ever had, compared to other subjects. It is obvious there is a lot of work behind it"* (Student 29). Lastly, 25.81% of the results referred to the teachers' involvement with the students, and their availability to attend to them through tutoring sessions and e-mails

(Student 64); *“I must also highlight the great availability they offered us, always emphasising that we did not give them extra work, as it was their job. They replied to our e-mails always quickly and properly”* (Student 68).

4. Discussion

This proposition was carried out during the pandemic situation to respond to the particular needs of the students, since it was necessary to revise and renew the methodologies and strategies that were in the university [6]. Similarly, attending to the situation generated by COVID-19, Burgos-Videla et al. (2020) [40] place stress on the methodologies and strategies to reduce the digital divide of the students with respect to their education.

The application of active methodologies, such as the flipped classroom, represents a significant change in teaching–learning processes, as our research reveals, which coincides with the results of other studies [20,21]. This work shows that the students acquired learning in an autonomous and collaborative way [21,22], thanks to the facilitating role of the faculty members, who provided the resources to the students for that purpose [17,19]. In order for the learning process to be meaningful, both the educator and the student must be committed, with the former assuming counselling functions, and the latter taking a more active role [39].

With regard to the students, it can be seen that the type of activities that are proposed in this research, and within the flipped classroom methodology, tend to develop soft skills in the students, in addition to the specific knowledge and competences of the subject matter. This method allows the students to retain a greater amount of content and to analyse the resources attentively and critically [50,51], as well as to improve their learning outcomes [45]. Moreover, during the course of the subject, the students enhanced their soft skills, including their personal and social skills, such as teamwork, communication, initiative, organisational capacities, leadership, etc. [21,22,32,34], which they can transfer to their professional environment, which can improve their employability.

In addition, the change in the subject assessment system that was due to the pandemic made it possible to verify the development of these transversal competences in the students, unlike the original test, which measured rote knowledge. These competences had to be acquired by the students in previous educational stages; however, they were not consolidated at the beginning of the subject [4,13].

In terms of the student satisfaction with the application of the flipped classroom methodology, these findings are in line with the positive valuations that the university students made in the study that was conducted by Campillo-Ferrer and Miralles-Martínez (2021) [51] on online resources, the nature of interactions, and the way of organising the content of the subject.

Finally, it is possible that there has also been an increase in student motivation, as other studies have shown [20–23]. However, the analysis of motivation is outside of the scope of our study.

5. Conclusions

This study presents an innovation experience in the university scope that is based on the flipped classroom methodology as a response to the methodological changes that are required in order to endow students with knowledge and competences in the scope of higher education. Moreover, this study contributes to the expansion of the literature on the application of active methodologies in higher education, specifically with regard to the influence of the flipped classroom methodology on the acquisition of knowledge and the development of competences in university students.

With respect to the first objective, as was evidenced by the results of this study, there were significant differences in the acquisition of knowledge by the students after applying the flipped classroom methodology. Therefore, we conclude that the methodological change that was carried out in the subject of “Theory and History of Physical Education,

Physical Activity and Sport” by the faculty members helped the students to integrate their knowledge in the teaching–learning process in higher education.

With regard to the second objective, the results of this study also evidenced, significantly, the impact of the teaching methodology on the competence levels of the students. After the experience presented in this work, the students developed competences in formal aspects and in those that were linked to research and organisation when they were exposed to the realisation of tasks and activities in which they played the leading role during the teaching–learning process. These competences are part of the training knowledge that students must acquire in higher education, and that can be transferable and useful for the socio-labour market.

Lastly, with regard to the third objective, the satisfaction of the students with the teaching methodology was positive in all the areas that were evaluated (evaluation and revision of the theoretical and practical credits; methodology used and communication system; and attention received from the faculty members). In view of these results, it is considered relevant to maintain this methodological change in the subsequent academic courses. Moreover, we even infer that student satisfaction may evidence the importance of the motivational component in such a process. Therefore, it is worth it to train faculty members in the flipped classroom methodology, and to understand the influence of the possible variables that are unrelated to the methodology that may interfere in the teaching–learning process. However, future studies should delve into this issue, which is beyond the limits of this study.

This study is exploratory and, therefore, the results cannot be generalised. Nevertheless, this work contributes to the expansion of the scientific literature on the benefits of the flipped classroom methodology. As for the limitations, these are mainly related to the consequences of the pandemic, as communication with students and feedback could not be established at any time in person. Likewise, the type of Internet connection of the students was a limitation, and, in many cases, they only had one electronic device for the whole family.

Therefore, from this study, we propose the following practical implications for higher education with regard to active methodologies, student competences, and faculty training.

With respect to active methodologies, we suggest promoting their use in higher education in order to favour learning that is based on competences, and not only conceptual competences, but also transversal competences.

Along the same line, we recommend developing and offering a seminar on training in transversal competences (information search, time management, learning to learn, etc.). This seminar could be carried out once per week at the beginning of the university course as part of the initial training of students. The topics to tackle could be organised in the following manner:

- a. First week: academic work (information search, databases, citation, writing, and researching);
- b. Second week: cooperative work (communication, role assumption, decision making, creativity, and use of tools);
- c. Third week: executive functions (time management, organisation, and study planning, before, during, and after);
- d. Fourth week: job market (demands of the job market).

Finally, within faculty training, we propose:

1. That higher education institutions (HEIs) promote the active participation of the faculty in continuous training courses about active methodologies, such as the one carried out in this study (flipped classroom, case studies, service learning, problem-based learning, etc.);
2. That the participation and recognition of the faculty is favoured in innovation projects in regional, national, and international calls to show the teaching experiences of its members in higher education;

3. To promote the collaboration and cooperation of the university faculty for the creation of experiences that are based on active methodologies that potentiate the competences of the students. In this context, it is fundamental for faculty members to be given the opportunity to disseminate them;
4. To revise the teaching projects of the different university subjects in order to detect the competences to be developed by the students, their connection with the teaching methodology, and their evaluation.

Author Contributions: Conceptualization, V.S.-M., Á.M.-G. and C.H.-G.; methodology, V.S.-M., Á.M.-G. and C.H.-G.; formal analysis, V.S.-M., Á.M.-G. and C.H.-G.; investigation, V.S.-M., Á.M.-G. and C.H.-G.; writing—original draft preparation, V.S.-M., Á.M.-G. and C.H.-G.; writing—review and editing, V.S.-M., Á.M.-G. and C.H.-G.; supervision, V.S.-M., Á.M.-G. and C.H.-G. All authors have read and agreed to the published version of the manuscript.

Funding: This research received no external funding.

Institutional Review Board Statement: Written informed consent from the participants was not required to participate in this study, in accordance with the national legislation and the institutional requirements.

Informed Consent Statement: Written informed consent from the participants was not required to participate in this study, in accordance with the national legislation and the institutional requirements.

Data Availability Statement: Not applicable.

Conflicts of Interest: The authors declare no conflict of interest.

References

1. Unceta, A. Cambios Sociales y Educación. *Rev. Educ.* **2008**, *347*, 419–432.
2. Martín-Gutiérrez, Á. Contextualización de los Centros de Formación Profesional en su Entorno: Retos y Oportunidades en la Sociedad del Conocimiento. Ph.D Thesis, University of Seville, Seville, Spain, 16 September 2015.
3. Weller, J. La inserción laboral de los jóvenes: Características, tensiones y desafíos. *Rev. CEPAL* **2007**, *2007*, 61–82. [[CrossRef](#)]
4. Ramírez, L.S.; López-Gil, K.S. *Orientar la Escritura a Través del Currículo en la Universidad*; Pontificia Universidad Javeriana: Bogotá, Colombia, 2018.
5. Vázquez-Miraz, P.; Rentería, C.; Martínez, M.J.; Zapata, K. Principales dificultades del alumnado universitario novel a la hora de elaborar un texto científico. *Tejuelo* **2020**, *32*, 117–146. [[CrossRef](#)]
6. Hernández, A.; Olmos, S. (Eds.) *Metodologías de Aprendizaje Colaborativo a Través de las Tecnologías*; Ediciones Universidad de Salamanca: Salamanca, Spain, 2011.
7. Adams-Angulo, J.A. Valoración de estudiantes universitarios sobre las didácticas significativas para su aprendizaje. *Rev. Iberoam. Psicol.* **2012**, *5*, 31–40.
8. Latorre-Cosculluela, C.; Suárez, C.; Quiroga, S.; Sobradriel-Sierra, N.; Lozano-Blasco, R.; Rodríguez-Martínez, A. Flipped Classroom Model before and during COVID-19: Using Technology to Develop 21st Century Skills. *Interact. Technol. Smart Educ.* **2021**, *18*, 189–204. [[CrossRef](#)]
9. Bilello, L.A. Turning The Tables On Tradition: Flipped High-Fidelity Simulation To Potentiate Learning. *Adv. Med. Educ. Pract.* **2019**, *10*, 959–961. [[CrossRef](#)] [[PubMed](#)]
10. Bjelobrk Knežević, D.; Tadic, V.; Širanović, Ž. Flipped Classroom Model for Advanced Networking Courses. In Proceedings of the 2019 42nd International Convention on Information and Communication Technology, Electronics and Microelectronics (MIPRO), Opatija, Croatia, 20–24 May 2019; pp. 600–604. [[CrossRef](#)]
11. Samuel, M.L. Flipped Pedagogy and Student Evaluations of Teaching. *Act. Learn. High. Educ.* **2021**, *22*, 159–168. [[CrossRef](#)]
12. Ministerio de Educación y Ciencia. Orden ECI/3960/2007, de 19 de Diciembre, por la Que se Establece el Currículo y se Regula la Ordenación de la Educación Infantil. 2008. Available online: <https://www.boe.es/buscar/pdf/2008/BOE-A-2008-222-consolidado.pdf> (accessed on 26 November 2021).
13. Rodríguez, J.; Cruz, P. De las competencias básicas a las competencias claves en educación infantil. Comparativa y actualización de las competencias en el currículum. *Propósitos Represent.* **2020**, *8*. [[CrossRef](#)]
14. Rodríguez-García, A.; Arias-Gago, A.R. Uso de metodologías activas: Un estudio comparativo entre profesores y maestros. *Braz. J. Dev.* **2019**, *5*, 5098–5111.
15. Hernández, F.; Ventura, M. *La Organización Del Currículum Por Proyectos de Trabajo*; Graó: Barcelona, Spain, 2020.
16. Montero, M. El proceso de Bolonia y las nuevas competencias. *Tejuelo* **2010**, *9*, 19–37.
17. Blasco-Serrano, A.C.; Lorenzo, J.; Sarsa, J. Percepción de los estudiantes al ‘Invertir la clase’ mediante el uso de redes sociales y sistemas de respuesta inmediata: Un estudio cualitativo. *RED Rev. Educ. Distancia* **2018**, *57*. [[CrossRef](#)] [[PubMed](#)]

18. Castilla-Cebrián, G.; Romana-García, M.G. La percepción del aprendizaje de los estudiantes de ingeniería en función de la metodología de aula aplicada: Flipped learning vs. convencional. *Rev. Form. Innovación Educ. Univ.* **2016**, *9*, 116–131.
19. Hernández-Silva, C.; Tecpan, S. Aula invertida mediada por el uso de plataformas virtuales: Un estudio de caso en la formación de profesores de Física. *Estud. Pedagógicos* **2018**, *43*, 193–204. [[CrossRef](#)]
20. Pozo-Sánchez, S.; López-Belmonte, J.; Fuentes-Cabrera, A.; López-Núñez, J.-A. Twitch as a techno-pedagogical resource to complement the flipped learning methodology in a time of academic uncertainty. *Sustainability* **2021**, *13*, 4901. [[CrossRef](#)]
21. Pozo-Sánchez, S.; López-Belmonte, J.; Fuentes-Cabrera, A.; López-Núñez, J.-A. Gamification as a methodological complement to flipped learning—an incident factor in learning improvement. *Multimodal Technol. Interact.* **2020**, *4*, 12. [[CrossRef](#)]
22. Parra-González, M.E.; López-Belmonte, J.; Segura-Robles, A.; Moreno-Guerrero, A.-J. Gamification and flipped learning and their influence on aspects related to the teaching-learning process. *Heliyon* **2021**, *7*, e06254. [[CrossRef](#)]
23. Pozo-Sánchez, S.; López-Belmonte, J.; Moreno-Guerrero, A.-J.; Sola-Reche, J.-M.; Fuentes-Cabrera, A. Effect of bring-your-own-device program on flipped learning in higher education students. *Sustainability* **2020**, *12*, 3729. [[CrossRef](#)]
24. Pires, F.; Yanes, C. Diseño de estrategias metodológicas innovadoras en los procesos de enseñanza—aprendizaje y creación de espacios formativos en la asignatura Teoría e Historia de la educación física y el deporte. *Rev. Enseñanza Univ.* **2013**, *39*, 1–13.
25. Ferrán-Zubillaga, A.; Guinot-Viciano, C. Aprendizaje-servicio: Propuesta metodológica para trabajar competencias. *Portularia Rev. Trab. Soc.* **2012**, *12*, 187–195.
26. Juárez-Pulido, M.; Rasskin-Gutman, I.; Mendo-Lázaro, S. El aprendizaje cooperativo. Una metodología activa para la educación del siglo XXI: Una revisión bibliográfica. *Rev. Prism. Soc.* **2019**, *26*, 200–210.
27. Walker, R. La realización de estudios de casos en educación. Ética, teoría y procedimientos. In *Nuevas Reflexiones Sobre la Investigación Educativa*; Narcea: Madrid, Spain, 1983; pp. 42–82.
28. Buitrago, M.M.S.; Fajardo, M.E.S. Comunidad de aprendizaje. Un espacio de formación para transformar las prácticas Docentes. *Educ. Cienc.* **2019**, *23*, 69–81.
29. Jordán, C.; Pérez, M.J.; Sanabria, E. Investigación del impacto en un aula de Matemáticas al utilizar flip education. *Pensam. Matemático* **2014**, *7*, 9–22.
30. Vleeschouwer, M.; Gueudet, G. Secondary-tertiary transition and evolution of didactic contract: The example of duality in linear algebra. In Proceedings of the CERME, University of Rzeszow, Rzeszow, Poland, 9–13 February 2011; pp. 2113–2122.
31. García, F.J.; Fortea, M.A. Ficha Metodológica Coordinada por Universitat Jaume I. Available online: https://msuarez.webs.uvigo.es/WEB_Deseno_Material_5b.pdf (accessed on 26 November 2021).
32. Jiménez, D. *Métodos Didácticos Activos en el Sistema Universitario Actual*; Dykinson: Madrid, Spain, 2018.
33. Sosa-Díaz, M.J.; Guerra-Antequera, J.; Cerezo-Pizarro, M. Flipped classroom in the context of higher education: Learning, satisfaction and interaction. *Educ. Sci.* **2021**, *11*, 416. [[CrossRef](#)]
34. Vasilchenko, A.; Cajander, A.; Daniels, M.; Balaam, M. The self-flipped classroom Concept: Underlying ideas and experiences. *Proc. Front. Educ. Conf. FIE* **2019**, *2018*, 8658616. [[CrossRef](#)]
35. Diario Oficial de la Unión Europea. Recomendación del Parlamento Europeo y del Consejo de 18 de Diciembre Sobre las Competencias Clave para el Apren-Dizaje Permanente (2006/962/CE). Available online: <https://eur-lex.europa.eu/legal-content/ES/TXT/HTML/?uri=CELEX:32006H0962&from=ES> (accessed on 26 November 2021).
36. Valūnaitė-Oleškevičienė, G.; Puksas, A.; Gulbinskienė, D.; Mockienė, L. Student experience on the development of transversal skills in university studies. *Pedagogika* **2019**, *133*, 63–77. [[CrossRef](#)]
37. Estriegana, R.; Medina-Merodio, J.A.; Barchino, R. Analysis of competence acquisition in a flipped classroom approach. *Comput. Appl. Eng. Educ.* **2019**, *27*, 49–64. [[CrossRef](#)]
38. Nilufar, K. Soft skills development in higher education. *Univers. J. Educ. Res.* **2020**, *8*, 1916–1925.
39. Sá, M.J.; Serpa, S. Transversal competences: Their importance and learning processes by higher education students. *Educ. Sci.* **2018**, *8*, 126. [[CrossRef](#)]
40. Burgos-Videla, C.; Vázquez-Cano, E.; López-Meneses, E.; Adaos-Orrego, R. Proyecto DIFPRORET: Análisis de las dificultades, propuestas y retos educativos ante el COVID-19. *Int. J. Educ. Res. Innov.* **2020**, *15*, 17–34. [[CrossRef](#)]
41. Chick, R.C.; Clifton, G.T.; Peace, K.M.; Propper, B.W.; Hale, D.F.; Alseidi, A.A.; Vreeland, T.J. Using technology to maintain the education of residents during the COVID-19 pandemic. *J. Surg. Educ.* **2020**, *77*, 729–732. [[CrossRef](#)]
42. Lapitan, L.D.S.; Tiangco, C.E.; Sumalinog, D.A.G.; Sabarillo, N.S.; Diaz, J.M. An effective blended online teaching and learning strategy during the COVID-19 Pandemic. *Educ. Chem. Eng.* **2021**, *35*, 116–131. [[CrossRef](#)]
43. Moreno-Guerrero, A.-J.; Soler-Costa, R.; Marín-Marín, J.-A.; López-Belmonte, J. Flipped learning y buenas prácticas docentes en educación secundaria. *Comunicar* **2021**, *29*, 107–117. [[CrossRef](#)]
44. Guillén-Gámez, F.D.; Perrino, M. Análisis univariante de la competencia digital en educación física: Un estudio empírico. *Retos* **2020**, *37*, 326–332. [[CrossRef](#)]
45. Padilla-Carmona, M.T.; Suárez-Ortega, M.; Sánchez-García, M.F. Inclusión digital de los estudiantes adultos que acceden a la Universidad: Análisis de sus actitudes y competencias digitales. *Rev. Complut. Educ.* **2016**, *27*, 1229–1246. [[CrossRef](#)]
46. Hidalgo Benites, L.E.; Villalba-Condori, K.O.; Arias-Chávez, D.; Berrios-Espezuza, M.; Cano, S. Aula invertida en una plataforma virtual para el desarrollo de competencias: Caso de estudio: Curso de onvestigación aplicada. *Campus Virtuales* **2021**, *10*, 185–193.
47. Hernández Sampieri, R.; Fernández Collado, C.; del Pilar Baptista Lucio, M. *Metodología de la Investigación*; McGraw-Hill: Bogotá, México, 2014.

48. Gibbs, G. *El Análisis de Datos Cualitativos En Investigación Cualitativa (Spanish Edition)*; Ediciones Morata: Madrid, Spain, 2012.
49. Åhman, S.; Nguyen, J.; Aghae, N.; Fuchs, K. Student response systems in a technology enhanced flipped classroom: A qualitative investigation in higher education. *Int. J. Learn. Teach. Educ. Res.* **2021**, *20*, 86–101. [[CrossRef](#)]
50. Pauk, W.; Owens, R. The Cornell System: Take effective notes. In *How to Study in College*; Houghton Mifflin College Div: Boston, AM, USA, 2010; pp. 235–277.
51. Campillo-Ferrer, J.M.; Miralles-Martínez, P. Effectiveness of the flipped classroom model on students' self-reported motivation and learning during the COVID-19 pandemic. *Humanit. Soc. Sci. Commun.* **2021**, *8*, 176. [[CrossRef](#)]