Cooperative learning at University: opinion of students and application of the instrument (CAC)

Cooperative learning is one of the active teaching and learning methodologies with a growing presence in the different educational stages in recent times. The aim of this work is to apply an instrument previously validated in university education to find out to what extent the fundamental elements of cooperative learning are potentiated. We used the *Cooperative Learning Questionnaire (CLQ)* of Fernández-Río *et al* (2017) with a sample of 500 students at the University of Huelva (Spain). The outcomes express, on the one hand, high scores on the items that make up the different basic elements of cooperative learning, as well as high positive correlations. Moreover, psychometric analysis of the instrument results in a high reliability, organising the elements of cooperative learning into three factors. In conclusion, it is confirmed that this methodology is potentiated through the study plans.

Keywords: Cooperative learning; higher education; teaching methodology; active learning.

Introduction

The European convergence process in university teaching brought with it the implementation of different didactic-pedagogical proposals that emphasised aspects that enhance active learning, motivating teaching, working in small groups inside and outside the classroom, or guiding-process facilitating work by the teacher (Jiménez *et al.*, 2020; Patesan *et al.*, 2016). This dynamic allows us to speak today of cooperative university classrooms and interactive higher education (Azorín, 2018; Fernández, 2017; García and Privado, 2020; Zhang *et al.*, 2019). Works such as those by Izquierdo *et al.* (2019), Krichesky & Murillo (2018) or Stortoni (2016), clearly highlight the importance of cooperative teamwork for the skills development of teachers in training, with a view to their transfer to the professional scope in Spain. Many other works, presented in a

systematic review carried out by Loh & Ang (2020), also denote the impact of this methodology in the higher education area on an international level.

According to authors such as Atxurra *et al.* (2015) or Fernández-Río *et al.* (2017), this kind of methodology finds its conceptual and procedural grounding in different theories of Psychology and Educational Sciences (Johnson and Johnson's Theory of Positive Interdependence, Carl Rogers' Humanist Theory or Gardner's Theory of Multiple Intelligences, among others), and is consolidated thanks to its main precursors Cohen (1994), Deutsch (1949), Dewey (1915), Johnson *et al.* (1994) or Kagan and Kagan (1994).

The conjunction of all this knowledge means that cooperative learning can be defined as a set of teaching techniques and/or procedures used by small groups of students (mixed and heterogeneous), as a method of organising the classroom to resolve tasks that involve self-learning, while emergent and necessarily coordinated interactions guide the achievement of common goals (Azorín, 2018; Johnson *et al.*, 2013; Sharan, 2014).

Many works have studied each of the variables that make up this teaching and learning methodology in depth (Atxurra *et al.*, 2015; Fernández-Ríos, 2017; Gil, 2015; Johnson and Johnson, 2014; Johnson *et al.*, 2013; Kagan and Kagan, 1994; Loh & Ang, 2020; Torrego and Monge, 2019, among others), which has allowed a certain consensus to be reached regarding the elements (factors) on the basis of which any cooperative learning proposal has to be structured. We would be talking about: *Positive Interdependence*: *Promoting or Simultaneous Interaction; Individual Responsibility; Group Cognitive Processing; Social Skills; Equitable Participation; Heterogeneous Clusters; Assessment; Tutoring*. The work by Fernández-Río *et al.* (2017) analysed

those recent studies that have evaluated cooperative learning and its elements in different non-university educational contexts.

However, taking into account the Spanish university context as a frame of reference for this research, evidence is gathered from in-depth studies of the scenarios of degree and postgraduate courses that develop initiatives linked to cooperative learning.

Gil (2015) presented the perceptions of the students of the Master's Degree in Teacher Training for Compulsory Secondary Education, Baccalaureate, Professional Training and Language Teaching (MFPS) of the University of the Basque Country (UPV-EHU) on cooperative learning; positive experiences linked to the development of curriculum competencies and attributed practical application. In the same postgraduate context (MFPS), Guisasola *et al.* (2013), expounded the need to implement changes in the methodological structure and opt for this type of cooperative strategies to bring students closer to professional settings.

Some of these conclusions in postgraduate teachings are also shared by other works focused on degree levels assigned to Education Sciences. Specifically, the findings presented by Gil (2015) can be appreciated in works such as that by Jauregui *et al.* (2014) on Pedagogy and Social Education students at the UPV-EHU; that of Martínez and Sirignano (2016) with students on the Social Work Degree course; that of Carrasco and Giner (2011), who also added the positive value attributed to the coherence between the organisation of subjects and the development of cooperative learning strategies; or that of Pegalajar and Colmenero (2013), who also highlighted the increase in the students' involvement in the classroom and the inherently associated increase in motivation and interest in the subject.

Azorín (2018) further specifies some of the proactive arguments of the students (greater involvement, assumption of different roles and responsibilities, inclusive and democratic attitudes, leadership capacity, empathy and greater cooperation, etc.), aspects also found in studies such as these of León del Barco *et al.* (2017), who emphasised increasing solidarity and a sense of belonging to the group. Linked to the latter, other aspects and lines of work that stand out in the literature as a positive attribution of cooperative learning have to do with the development of inclusion (Azorín and Ainscow, 2018), given the effectiveness of the values it involves to achieve inclusive schools.

Other works acknowledge the existence of aspects that could be understood as factors of resistance to methodological change (the weight of tradition and known resources). Specifically, Bermejo *et al.* (2020) reveal the presence of some irresponsibilities due to the non-assumption of roles by components of the groups. Escolano-Pérez *et al.* (2012) also pointed to difficulties in terms of the large amount of time required, the lack of trust in colleagues when transmitting information and generating discussions, or non-compliance with criteria when distributing the tasks (there is no equity). Meanwhile, Barba *et al.* (2012) showed that students had difficulties in applying what they had learned to their educational reality.

In the same line, Izquierdo *et al.* (2019) concluded that the use of this methodology is associated more with a transversal training through which to access the development and enhancement of social (exchanges of points of view, coordination with colleagues) and working competences (managing ideas linked to the professional framework) than with compulsory curricular training required to achieve the qualification. For reasons such as these, and although many of the cited works show that students acknowledge that they are capable of working in this way, there are others that

recognise discrepancies between studies that share it (García *et al.*, 2018; Gil, 2015) and others that argue that it is not so easy to assume this statement (Goodyear & Casey, 2015).

In short, both benefits and limitations associated with cooperative learning have been observed in higher education. Following the work carried out by Loh & Ang (2020), a widely shared classification is established both in the national and international literature, which includes benefits linked to academic, affective and social competence and factors that are associated with strengthening or limitation of the development of cooperative learning (Teachers; Student; Group forming; Environment and university disciplines; Culture).

From all this, it follows that this teaching and learning methodology is clearly widespread among university degree courses and, in many cases, it is incorporated into the curriculum, whereas in others it continues to consist of specific actions of an innovative nature that end up using it and offering it as a crosscutting resource for their students. In any case, this denotes a positive connection with academic performance and a key importance for its transfer to the professional scope once university training is completed at different levels (undergraduate and postgraduate degrees).

Objectives

1. To determine to what extent the fundamental elements of cooperative learning are promoted through university education study plans.
2. To analyse the psychometric properties of the Cooperative Learning Questionnaire (CLQ) in order to determine its adaptation to the university context.

Method

This study is based on a quantitative approach, proposing a cross-sectional survey type methodological design, through which to describe and explain the object of study, as well as to determine the relationships existing between its constituent variables

Sample

An intentional non-probabilistic sampling was carried out among students enrolled in the Faculty of Education, Psychology and Sports Sciences of the University of Huelva during the 2019/2020 academic year. The outcome was a sample of 500 students enrolled in the different Bachelor's degrees [Early Childhood Education (177); Primary Education (81); Social Education (140); Sciences of Physical Activity and Sports (17)]; and Masters [Master in Pedagogical Innovation and Educational Leadership (20); MAES (Educational Guidance) (18); Master in Psychosocial Research and Intervention (15); Master in Special Education (32)]. A sampling error of 5% was assumed for a confidence level of 95% and to contribute to the representativeness of the sample and increase the reliability and levels of bias. The students had an average age of 22.5 years, distributed among 89.8% corresponding to women and 9.6% to men.

Instrument

The instrument used was the *Cooperative Learning Questionnaire* designed by Fernández-Río *et al.* (2017) and validated through a sample of students from the stages of Primary Education, Compulsory Secondary Education and Baccalaureate (11,202 students).

The psychometric properties obtained in the reliability and validity tests carried out by the authors are excellent and overcome many of the difficulties/barriers found in other instruments that investigate the measurement of cooperative learning (Atxurra *et al.*, 2015 and Fernández-Río *et al.*, 2017 carried out comprehensive analyses of instruments existing to date). These resulted in a very useful and easy-to-use instrument (breadth of

educational stages considered), consisting of 20 items arranged in a 5-point Likert scale format, from (1) strongly disagree to (5) strongly agree, and grouped into five factors (subscales) that are identified as five basic elements of cooperative learning: *Social skills* (items 1, 6, 11, 16); *Group processing* (items 2, 7, 12, 17); *Positive interdependence* (items 3, 8, 13, 18); *Promoter interaction* (items 4, 9, 14, 19), and *Individual responsibility* (items 5, 10, 15, 20). Finally, the authors also determined a possible emergent factor derived from the conjunction of the five set out and which is related to *Overall cooperation*.

Procedure and data analysis

The process was developed over the last two months of the course, as by this time the participants should have covered almost all of the course subjects. Interviewees were given instructions for completing the instrument and assured of the confidentiality and anonymity of the responses.

The information compiled was analysed using SPSS v23 software. Specifically, to respond to the first objective, a descriptive analysis was carried out, obtaining for each variable the mean ( ), standard deviation (S.D.) and homogeneity index through corrected total correlation (Cr-iT). In addition, the percentages of responses with low (1-2), medium (3) and high scores were also obtained. (4-5).

To meet the second objective, a factor analysis with maximum likelihood and varimax rotation with Kaiser was performed first, with the aim of studying the proposed factorial structure. The request was made to exclude factor loadings lower than .5, as the aim is to minimise the information measured by each factor and it is more appropriate for subsequent confirmatory analyses. The total reliability index of the scale and partial reliability of each factor were also obtained, through Cronbach's Alpha. Finally, the resulting factorial structure was confirmed through a structural equation model with

Amosv18, analysing the goodness of fit indices of the model: the residual mean square root (RMSEA, recommended value <.07; the chi-square statistic, recommended value between 2 and 5; IFI, incremental adjustment index, the recommended value being ≥ .90; NFI, normalised fit index, the recommended value being close to 1; the CFI, comparative adjustment index, the recommended value being ≥ .90 and HOELTER, with recommended value >200).

Results

Analysis of the opinion of university students on the extent to which the fundamental elements of cooperative learning are promoted through the curricula of university education.

Table 1 shows how most of the variables studied rated high scores from the majority of respondents. In this sense, the items where there is more unanimity refer to *individual responsibility*, where both item 10 (96.2%), item 5 (94%) and item 15 (92%) rated high scores.

However, in the rest of the variables there are also high scores: for example, *positive interdependence* was given a high score for item 18 (90.2%) and item 13 (90%). As for *social skills,* the highest scores were for item 11 (88.8%) and item 6 (81.2%). The highest scores for *group processing* went to item 12 (86.8%), item 17 (82.6%) and item 7 (80.3%); and finally, regarding *promoter interaction,* item 9 (86.4%) and 14 (82.6%) stand out in the high scores.

On the other hand, the lowest scores are found in items 8 (13.4%), item 2 (10.2%), and item 20 (10.6%), referring to *positive interdependence*, *group processing* and *individual responsibility*, respectively. Moreover, these items are the ones with the greatest diversity of scores obtained among the subjects studied.

Regarding the degree of similarity in the relationship between the response to an item and the rest of the items (Cr-iT), it is observed that almost all of the items correlate with each other (correlations greater than .50 or close to these) and point in the same direction (the correlations are all positive); the items whose correlations seem weakest are item 18 (.28) and item 20 (.23). The literature states that correlations lower than .3 are items that can cause problems in subsequent analyses (as one of the aims of this work is to study the psychometric properties of the measuring instrument, the decision was taken to rule out both items for the subsequent analyses).

Analysis of psychometric properties of the instrument

Factor analysis and Cronbach's Alpha

Factor analysis was performed with a maximum likelihood method and varimax rotation with Kaiser. The measure of sampling adequacy with Kaiser (.92) and Bartlett's sphericity test = 3385.84, $p < 0.000$, make factor analysis appropriate.

Table 2 shows the factors extracted after removing items 18 and 20 due to their low correlations with the rest of the items (<.3). In addition, a request was made to exclude factor loadings lower than .5 from the analysis, as the aim was to reduce the information measured by each factor to the minimum possible and it is more appropriate for confirmatory analyses.

The factor analysis yielded a structure composed of three factors that explain 53.62% of the total variance. Factor 1, 'Group learning', explained 37.99% of the variance and refers to those items related to the way in which group learning occurs, both in terms of interaction processes (working directly, interacting to engage in activities, carrying out joint activities) and processing activities together (ideas are reflected and discussed among all members of the group) and the social skills necessary for the implementation

of group work, such as reaching agreements and listening to the contributions and points of view of all concerned.

Factor 2, ‘Group obligations’, explains 9.02% of the total variance and includes those items that refer to the individual responsibility that each member of the group has in the task, as well as the mechanisms of collaboration between colleagues (sharing materials, information, etc.).

Finally, factor 3 ‘Group follow-up techniques’, explains 6.61% of the total variance and refers both to the interaction of ideas after living the experience to reach consensual conclusions, and to the social skills used in the exchange of ideas (in this case, dialogue, listening skills and debating, as well as the way in which these ideas are presented and defended before all colleagues).

From the extracted factors, the reliability of the instrument was analysed through Cronbach's Alpha for each of them, as well as the reliability of the full scale. The Alpha results point to a reliable instrument: Full scale, Alpha = .86 for 13 items. Factor 1, Alpha = .84 for 6 items; Factor 2, Alpha = .70 for 4 items; Factor 3, Alpha = .75 for 3 items.

Confirmatory analysis by structural equation model

Figure 1 represents the three factors extracted, as well as the variables that saturate each factor with their respective factorial weights. As can be seen, all factorial weights are greater than .50, which indicates their high explanatory level. In other words, the model explains a high percentage of the variances of each of the variables.

The high covariances among the three factors (F3 <--> F1, 681; F3 <--> F2, 403; F1 <--> F2, 675) indicate that they share a large amount of information, leading us to consider

the existence of a factor originating from the connection between the three factors extracted and which could refer to an integral cooperation.

Finally, regarding the fit indices, in general it can be noted that the results reflected that the measurement model appropriately details the data: the residual mean square root, RMSEA = .07 (recommended value <.07) ; the chi-square statistic = 3.52, (recommended value between 2 and 5); IFI (incremental adjustment index) = .92 with the recommended value ≥ .90; NFI (normalised fit index) = .90 with the recommended value close to 1; the CFI (comparative adjustment index) = .92 being the recommended value ≥ .90; HOELTER = 208 (recommended value >200).

In view of these results, it can be concluded that the resulting factorial structure consists of three factors: *Group Learning, Group Obligations and Group Follow-up*.

Conclusion and Discussion

After the results obtained, the university students identified certain fundamental elements of cooperative learning as didactic structures with which they are familiar and which are part of their curriculum, coinciding with those described in the studies by Atxurra *et al.* (2015), Fernández-Río (2017), Gil (2015), Johnson and Johnson (2014), Johnson *et al.* (2013), Kagan and Kagan (1994), Loh & Ang (2020) or Torrego and Monge (2019). Specifically:

One of these elements is *individual responsibility*, where each group member must make an effort in group activities, take part in group tasks and try to participate, even if they do not like the task.

Regarding *positive interdependence*, great value is given to the fact that the better each member of the group does his or her task, the better the group's result, and that it is important to share materials, information, etc. in order to complete the task. They have

to listen to the opinions and points of view of their classmates and they must put forward and defend ideas, knowledge and points of view in the presence of their colleagues (*social skills*).

It also seems to be evident, in terms of *group processing*, that ideas should be debated among group members, reflected upon individually and jointly within the group, and that decisions should be taken in a consensual manner among all colleagues in the group.

Finally, regarding *promoter interaction*, the need for interaction between groupmates to complete the task and the relationship with each other to do the activities stands out.

Moreover, a more disparate score is obtained in certain aspects related to positive interdependence, individual responsibility and group processing (items 2, 8, 20) that denote some obstacles linked to the development of cooperative practice, as pointed out by Bermejo *et al.* (2020) or Escolano-Pérez *et al* (2012). Nevertheless, these findings highlight the importance of collaborative learning as a didactic tool to be used in university classrooms, due to its suitability and evident importance in the training of students and their academic success (García and Privado, 2020). On the other hand, the promotion of cooperative learning is also determined by other factors related to how students approach the world of work, where the acquisition of skills such as teamwork, social skills, leadership, emotional intelligence or stress management, among others, is crucial (Guisasola *et al.*, 2013).

In this sense, to develop cooperative learning initiatives we observed some elements that prompt a rethink of the organisation of work within the groups, such as the roles of each group member or the type of leadership exercised. To this end, it becomes necessary to specify a series of strategies to achieve equitable participation within these cooperation groups, such as: establishing participation turn taking, rotation of roles

within the group, dedicating individual time within group time, specifying the number of group members as the ideal number, 4-5 people, etc. (Fernández-Río, 2018).

As for the second of the objectives, to analyse the psychometric properties of the instrument (CLQ) to determine its adaptation to the university context, from the initial factorial structure consisting of five factors (Social skills, Group processing, Positive interdependence, Promoter interaction and Individual responsibility), following the factor analysis carried out, a structure of three factors was obtained where the main items that define each of them are represented. In this sense, we observe how the items initially proposed in the social skills factor have been located in two of the extracted factors. That is, there are social skills related to group monitoring (items 1 and 6) (Factor 3) and others related to group learning (items 11 and 16) (Factor 1).

The first factor, 'Group learning', saturated items that were initially part of the promoter interaction (19 and 14), social skills items (11 and 16) and group processing items (17 and 12).

The second resulting factor, 'Group obligations' is the one that most closely resembles the one that we initially proposed, 'Individual Responsibility', as there is only one item that differs from the initial approach. Item 20 is eliminated and item 13 is coupled to this factor, which initially corresponded to the positive interdependence factor, which disappears, due to not strongly saturating the rest of the items.

Finally, the third factor, 'Group monitoring techniques' loads factors related to social skills (1 and 6) and group processing. (2).

These three factors are key in collaborative learning and lead students to acquire a series of personal (teamwork, listening, consensus), systemic (quality of work, academic

success, ability to learn to learn) and instrumental (ability to organise and plan work, decision making, communication) skills (Pegalajar, 2018). Thus, the factors found in our study differ partially from the initial proposals, arbitrarily corroborating the initial conceptual validation.

In view of the results and the adjustments made to the CLQ, we highlight that the instrument designed by Fernández-Río *et al.* (2017) has discriminated suitably enough to be adapted and applied to the university environment, taking into account the modifications made in this work regarding the items, serving as an instrument for consolidation of the evaluation of cooperative learning.

In short, taking into account the important role that cooperation plays in today's societies, where interpersonal relationships act as determinants in personal development, growth and identity, we agree with Johnson and Johnson (2014) when referring to the fact that one of the main tools to respond to these hurdles or challenges from the educational system is collaborative learning.

As a line of work, we propose to approach cooperative learning as a methodology that should emphasise the content and resources for teaching and learning, as well as dedicating more time to their evaluation (Pérez-Pueyo *et al.*, 2020). Among the limitations of this study, it is worth noting the small sample of students and its incidence to further strengthen the validation process of the instrument.

Disclosure statement

No potential conflict of interest was reported by the author(s).

Funding

This work is funded by the 21st Call for Teaching Innovation and Research Projects of the University of Huelva.

References:

Atxurra. C., Villardón. L., & Calvete. E. (2015). Diseño y validación de la escala de aplicación del aprendizaje cooperativo (CLAS). *Revista de Psicodidáctica*, *20*(2), 339-357. https://doi.org/10.1387/RevPsicodidact.11917

Azorín, C. M. (2018). El método de aprendizaje cooperativo y su aplicación en las aulas. *Perfiles educativos*, *40*(161), 181-194. Retrieved from http://www.scielo.org.mx/scielo.php?script=sci_arttext&pid=S0185-26982018000300181&lng=es&tlng=es.

Azorín, C. M., & Ainscow, M. (2018). Guiding Schools on their Journey towards Inclusion. *International Journal of Inclusive Education*, 1-19. https://doi.org/10.1080/13603116.2018.1450900

Barba, J. J., Martínez, S., & Torrego, L. (2012). El Proyecto de aprendizaje tutorado cooperativo. Una experiencia en el Grado de Maestra de Educación Infantil. *REDU - Revista de Docencia Universitaria*, *10*(1), 123-144. https://doi.org/10.4995/redu.2012.6125

Bermejo, J. M., Pulido, D., Galmés, A., Serra, P., Vidal, J., & Ponseti, F. J. (2020). El aprendizaje cooperativo como metodología de aprendizaje en la educación física universitaria. *Retos*, *(39),* 90-97. http://hdl.handle.net/11201/152587

Carrasco, V., & Giner, A. (2011). Investigación evaluativa de una experiencia de enseñanza-aprendizaje en el Máster de Formación del Profesorado de Educación Secundaria. *Enseñanza & Teaching*, *29*(1), 111-133. https://revistas.usal.es/index.php/0212-5374/article/viewFile/8319/9559

Cohen, E. G. (1994). *Designing groupwork: Strategies for the heterogeneous classroom* (2nd ed.). New York: Teachers College Press.

Dewey, J. (1915). *The school and society*. Chicago. IL: The University of Chicago Press.

Deutsch, M. (1949). An Experimental Study of the Effects of Co-Operation and Competition upon Group Process. *Human Relations*, *2*(3), 199-231. https://doi.org/10.1177/001872674900200301

Escolano-Pérez, E., Tomás-Aragonés, L., & Herrero, M. L. (2012). Percepción del alumnado universitario sobre su primera experiencia de aprendizaje colaborativo. *V Congreso Mundial de Estilos de Aprendizaje*. Santander, junio 27, 28 y 29, 2012. https://dialnet.unirioja.es/servlet/articulo?codigo=4644391

Fernández-Río, J. (2017). El ciclo del aprendizaje cooperativo: una guía para implementar de manera efectiva el aprendizaje cooperativo en educación física. *Retos. Nuevas Tendencias en Educación Física, Deportes y Recreación*, *32*, 264-265. https://dialnet.unirioja.es/servlet/articulo?codigo=6352316

Fernández-Rio, J., Cecchini, J. A., Méndez-Giménez, A., Méndez-Alonso, D., & Prieto, J. A. (2017). Diseño y validación de un cuestionario de medición del aprendizaje cooperativo en contextos educativos. *Anales de Psicología/Annals of Psychology*, *33*(3), 680-688. https://doi.org/10.6018/analesps.33.3.251321

Fernández-Río, J. (2018). Participación equitativa e igualdad de oportunidades de éxito: sexto y séptimo elementos básicos del aprendizaje colaborativo. En *XI Congreso Internacional de Actividades Físicas Cooperativas*. Servicio de Publicaciones de la Universidad de Oviedo.

García, C. M., Castañeda, E., & Mansilla, J. M. (2018). Experiencia de innovación en el aula desde la autorregulación y los estilos de aprendizaje. *Tendencias Pedagó gicas*, *31*, 137-148. http://dx.doi.org/10.15366/tp2018.31.008

García, C., & Privado, J. (2020). Predicting cooperative work satisfaction of autonomous groups using a wiki tool in higher education. *Interactive Learning Environments*, https://doi.org/10.1080/10494820.2020.1764590

Gil, P. (2015). Percepciones hacia el aprendizaje cooperativo del alumnado del Máster de Formación del Profesorado de Secundaria. *REDU - Revista de Docencia Universitaria, 13*(3), 125-146. https://doi.org/10.4995/redu.2015.5423

Goodyear, V. A., & Casey, A. (2015). Innovation with change: Developing a community of practice to help teachers move beyond the 'honeymoon' of pedagogical renovation. *Physical Education and Sport Pedagogy*, *20*(2), 186-203. https://doi.org/10.1080/17408989.2013.817012

Guisasola, J., Barragués, J. I., & Garmendia, M. (2013). El Máster de Formación Inicial del Profesorado de Secundaria y el conocimiento práctico profesional del futuro profesorado de Ciencias Experimentales, Matemáticas y Tecnología. *Revista Eureka Sobre Enseñanza y Divulgación De Las Ciencias*, *10*, 568-581. https://doi.org/10.25267/Rev_Eureka_ensen_divulg_cienc.2013.v10.iextra.06

Izquierdo, T., Martínez, E. A., Frutos, A. E., & Moreno, J. R. (2019). El aprendizaje cooperativo en la formación de maestros de Educación Primaria. *Revista de Investigación Educativa*, *37*(2), 543-559. https://doi.org/10.6018/rie.37.2.369731

Jauregui, P. A., Vidales, K. B., Casares, S. G., & Fuente, A. V. (2014). Estudio de caso y aprendizaje cooperativo en la universidad. Profesorado. *Revista de Currículum*

y Formació n de Profesorado, *18*(1), 413-429. https://recyt.fecyt.es/index.php/profesorado/article/view/41094

Jiménez, D., González, J. J., & Tornel, M. (2020). Metodologías activas en la universidad y su relación con los enfoques de enseñanza. *Profesorado. Revista de Currículum y Formación de Profesorado*, *24*(1), 76-94. 10.30827/profesorado.v24i1.8173

Johnson, D., & Johnson, R. (2014). Cooperative learning in 21st Century. *Anales de Psicología, 30*(3), 841-851. https://doi.org/10.6018/analesps.30.3.201241

Johnson, D., Johnson, R., & Holubec, E. (2013). *Cooperation in the Classroom.* Edina, Interaction Book Company.

Johnson, D. W., Johnson, R. T., & Holubec, E. J. (1994). *Cooperative learning in the classroom.* Alexandria, VA: Association for supervision and curriculum development.

Kagan, S., & Kagan, M. (1994). The structural approach: Six keys to cooperative. En S. Sharan (Ed.), *Handbook of cooperative learning methods* (pp. 115-133). Westport, CT: Greenwood Press.

Krichesky, G. J., & Murillo, F. J. (2018). La colaboración docente como factor de aprendizaje y promotor de mejora: Un estudio de casos. *Educación XX1, 21*(1), 135-156. https://doi.org/10.5944/educxx1.20181

León del Barco, B., Mendo, S., Felipe, E., Polo, M.I., & Fajardo, F. (2017). Potencia de equipo y aprendizaje cooperativo en el ámbito universitario. *Revista de*

Psicodidáctica, *22*(1), 9-15 https://doi.org/10.1016/S1136-1034(17)30038-2

Loh, R. C.-Y., & Ang, C.-S. (2020). Unravelling Cooperative Learning in Higher Education. *Research in Social Sciences and Technology*, *5*(2), 22-39. https://doi.org/10.46303/ressat.05.02.2

Martínez, A. J., & Sirignano, F. M. (2016). El aprendizaje cooperativo como estrategia didáctica para la adquisición de competencias en el EEES. Propuesta y reflexión sobre una experiencia. *Hekademos: revista educativa digital*, (19), 7-19. https://dialnet.unirioja.es/servlet/articulo?codigo=6280712

Patesan, M., Balagiu, A., & Zechia, D. (2016). The benefits of cooperative learning. *International Conference Knowledge-Based Organization, 22*(2), 478-483. https://doi.org/10.1515/kbo-2016-0082

Pegalajar, M., & Colmenero, M. (2013). Percepciones hacia el aprendizaje cooperativo en estudiantes del Grado de Maestro. *REDU - Revista de Docencia Universitaria*, *11*(3), 343-362. https://doi.org/10.4995/redu.2013.5532

Pegalajar, M. C. (2018). Formación en competencias en alumnado universitario mediante prácticas basadas en aprendizaje cooperativo. *Revista Complutense de Educación, 29*(3), 35-52. https://doi.org/10.5209/RCED.53970

Pérez-Pueyo, A., Hortigüela, D., & Fernández-Río, J. (2020). Evaluación formativa y modelos pedagógicos: Estilo actitudinal, aprendizaje cooperativo, modelo comprensivo y educación deportiva. *Revista Española de Educación Física y Deportes, 428,* 47-66. https://www.reefd.es/index.php/reefd/article/view/881

Sharan, Y. (2014). Learning to cooperate for cooperative learning. *Anales de Psicología*, *30*(3), 802-807. https://dx.doi.org/10.6018/analesps.30.3.201211

Stortoni, M. (2016). El rol docente en los grupos de ingresantes universitarios. Escritos en la Facultad, *37*, 37-39. Retrieved from https://fido.palermo.edu/servicios_dyc/publicacionesdc/ archivos/624_libro.pdf

Torrego, J. C., & Monge, C. (coords.) (2019). *Inclusión educativa y aprendizaje cooperativo*. Síntesis.

Zhang, S., Wen, Y., & Liu, Q. (2019). Exploring student teachers' social knowledge construction behaviors and collective agency in an online collaborative learning environment. *Interactive Learning Environments,* https://doi.org/10.1080/10494820.2019.1674880