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Collaborative learning an active methodology in Long distance education. Theoretical review

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Abstract

The objective of this review work is to analyze publications on collaborative learning as a fundamental strategy for the acquisition of competences, in a distance context. To carry out this literature review, 45 articles from the Scopus, EBSCO and Scielo databases were examined; in English and Spanish, between the years 2017 to 2021. The terms used for the search were "Collaborative learning", "Collaborative learning" Collaborative learning AND distance education and in English Collaborative AND distance education. Likewise, for the analysis of the results, 15 articles were used that were previously organized in a table of analysis and selection of articles by article title, author (s), year, country, sample, design, methodological, indexing and contributions to the revision. As a result of this research, it was found that collaborative learning contributes significantly to the teaching-learning process, improves interaction between students, develops soft skills, critical thinking, promotes values such as responsibility, solidarity and teamwork, using tools, resources to achieve personal and academic success.

Keywords: Collaborative learning, active methodology, distance education

1. Introduction

The current educational context is based on a technology-mediated competency approach, therefore collaborative learning is an adequate didactic method to achieve it, learning is centered on students formed by small groups, using digital motivation to achieve their common objectives (Estrada et al., 2019). In addition, collaborative learning is the work between pairs, of interactive groups of students whose purpose is to maximize their personal and group learning (De Espinoza et al., 2019).

Likewise, collaborative learning has become an indispensable element for the teaching-learning process, therefore, it is necessary to apply an active and interactive methodology in virtual classrooms (Agredo-Delgado et al., 2020). In addition, it should be noted that collaborative learning is one of the necessary skills, it is based on asynchronous interactions that favors autonomy in each of the members of the group, by using the different platforms to exchange information with their peers and allows the achievement of the learning in a democratic and shared way (García-Chitiva, 2021).

In turn, when developing collaborative learning, the teacher assumes the role of facilitator, guide, and collaborator during the development of the learning process, leaving aside being a transmitter of knowledge; achieving that students are the active protagonists responsible for their proposed goal (Cornide-Reyes &Villarroel, 2019). In the same way, collaborative learning generates

relevant, motivating, useful, lasting, profound, significant learning, it interrelates the theoretical with the practical, improving academic results (Castillo & Suárez, 2020). Additionally, it is evidenced through investigations that collaborative learning in virtual environments are designed by techniques, educational technological resources, enhancing the classrooms in a didactic way, generating significant events in them (Lizcano-Dallos et al., 2019).

Different studies carried out in high-performance accreditation schools using ICT show that teachers who have experience in the use of a collaborative methodology, students show a high level in their values (Muñoz-Repiso&Tejedor, 2018). It is also manifested that in a virtual classroom to acquire digital skills it is required to apply active, participatory models where all students feel involved, in studies carried out in educational innovation in Spain, improvements in the areas are shown when applying this interactive methodology (Romero -Garcia et al., 2020).

Collaborative learning characteristics

In the educational environment, collaborative learning highlights the interaction process between students, it is worth mentioning some characteristics that facilitate the teaching-learning process, among which we can mention:

(a) Positive interdependence consists of creating a bond between colleagues, clearly mentioning the task and the group objective that they have to carry out with the intention that everyone has knowledge of how to achieve the expected purpose together. Therefore, each member of the group must be clear that the effort of each one depends on the success of the others (Johnson et al., 1999; Ortiz et al., 2019).

(b) Face-to-face interaction is achieved when there is a mutual interaction and a verbal exchange between the group companions, therefore it requires committed and committed students, the groups must be formed of four members at most since in some At times, they will fulfill a double function, by sticking to cooperative work it will allow the change to occur in their different functions, this is how the student will acquire high performance (Reyes & Reyes, 2017).

(c) Individual responsibility and personal valuation, means that the whole group has the obligation to achieve its objectives by generating the common good, each of its members is responsible for carrying out the part of the work that corresponds to him, in this situation no one can stop working and much less use the work of another colleague, its purpose is that through work in learning teams students are strengthened academically, affectively, it allows to determine who needs more help, support to carry out their task (Garrote et al., 2019); (Ortiz et al., 2019).

(d) With regard to interpersonal skills, it is considered a value for the education of the student, social skills are practiced as clear, precise communication, the support that is given between them is reciprocal, they solve their problems in a constructive way, They accept themselves as they are and there is trust between themselves. These skills are an essential requirement for good performance in group work seeking to acquire higher order learning (Luna, 2021).

(e) Processing or group self-evaluation consists of identifying the behaviors that each of the students manifest during group work and are even part of the process of measuring their achievements and from this they propose changes, improvements to achieve the proposed objectives (Bermejo et al., 2020).

Importance

Collaborative learning is important because it allows students to democratically share their learning goals, build their topic, specializing in their tasks or activities in a shared way in a virtual mode (García-Chitiva, 2021).

Likewise, collaborative learning allows students to improve their emotional and socio-affective state, predisposes them to the acquisition of new knowledge, fundamental values to live together in a harmonious climate; For this, teachers have the responsibility of planning challenging activities to achieve significant results (Sánchez - Molina et al., 2021).

Consequently, collaborative learning manages to reduce conflicts, avoid competitiveness, improve relationships, social skills, respecting their rhythm, level of learning and all complement each other to achieve their purpose (Sánchez - Molina et al., 2021). According to findings, collaborative learning favors the understanding of students in different topics, otherwise it does not happen when working with the traditional method, it limits all possibility of obtaining common achievements (González-Jaramillo et al., 2021). Collaborative learning proposes repetitive work, generating feedback in students, coming to recognize some conceptual errors, produces reflection in them and finally helps to improve and be successful in the work carried out (Cornide-Reyes &Villarroel, 2019).

On the other hand, collaborative learning promotes critical thinking through speeches, debates, arguments, exhibitions approached in a group way, creating in the student a higher order development and thinking (Silva et al., 2019). Even collaborative learning is important to combine with literature because it improves the use of strategies in the understanding and personal growth of students, leaving aside selfishness, individuality; the student becomes more human and flexible (de la Barra & Carbone, 2020).

Collaborative learning is a methodology that also responds to the attention of students with special needs, the teacher has to plan their activities in coordination with the other departments, inclusive cooperative actions to serve them respecting the diversity and needs of each of the students; promoting in them the protagonism of their own learning and as a product they obtain more significant learning (Castillo & Suárez, 2020). It should be noted that this methodology promotes transversal competence, effective communication of their ideas, highlights critical analysis, decision-making, resolving conflicts, adapting naturally to changes, increasing autonomy in students, empathy towards others. people; improving the climate where it develops and seeks the common good of all the people who revolve around its environment (Castillo & Suárez, 2020).

Another important aspect that this methodology encourages is the development of their social competence, it attends positively to diversity and individual differences, it reduces bullying (Juárez-

Pulido et al., 2019). In turn, cooperative learning allows students to be responsible in the long term, fulfill their obligations, develop socially, promoting collaboration and collective work. (Romero-Garcia et al., 2020). Likewise, it is important that at all educational levels and even the higher level it is necessary to implement learning structures with a cooperative methodology, being the fundamental axis to develop skills (Sanchez Marin et al., 2019).

Strategies for distance education

Collaborative learning in times of pandemic is a strategy that requires using the following tools to achieve common objectives, including the following:

- The forum consists of responding to the questions posed according to the topic addressed, a record is left and a follow-up of the ideas is carried out, as well as allows reading the comments of the rest of the students, including the teacher and make exchanges of ideas, suggestions allowing joint work as proposed by collaborative learning, promoting the construction of new learning collectively (Basogain& Olmedo, 2020).

- The tutoring space is created by the teachers with the purpose of giving feedback, monitoring the learning to the students, forming small groups to review and improve some errors found in teamwork.

- Videoconferences, it is a virtual room that allows interaction between teacher and students, they can communicate through audios, videos and a large group of students can enter this platform at the same time (Cabero-Almenara et al., 2020) .

- Sending assignments, allows recording the learning process, self-evaluation, evaluation of students, for this it is essential that the teacher record their comments on each of the evidence sent, make corrections, suggestions and possible improvements to collaborative work (Ortiz et al., 2019).

- The wiki allows students to modify, create, add content quickly, easily, it is a work that is given in a collaborative way, ideal for teamwork, all students can immediately participate, contribute and modify their task (García-Quismondo& Cruz-Palacios, 2018).

- Workshop, admits the sending of their works to be collected, reviewed, evaluated among their peers, allowing to improve the submissions with the guidance of their teacher for the development of collaborative work (Navarro et al., 2019)

- The chat is a virtual space created by the teacher at a certain time, it allows entry to all who wish to join to answer their questions jointly, it generates an immediate interaction in the students and by leaving the virtual space all the contributions are not recorded (Cabero-Almenara et al., 2020; (Ortiz et al., 2019).

- Google Meet, Zoom, are resources that create a collaborative environment, allow students to interact using audios, camera, can record meetings, share screen showing files, images, videos, it is very interesting to work in these spaces where it is encouraged autonomy in students (Fernández, 2020).

- Other resources are the different social networks, which are very important to use in the academic context at a distance is WhatsApp, Instagram, Facebook, Twitter facilitating the participation, communication, collaboration, cooperation of the working group. On the other hand, for the use of the aforementioned tools to be effective, it is essential to create a space of trust, harmony so that students lose their fear, fear of making mistakes, not knowing how to use them and, on the contrary, that they value the work of their peers and even that they make changes with the sole intention of improving them in a positive way (Varona-Fernández & Hermosa-Peña, 2020; Reyes-Garcés et al., 2018).

Therefore, for the use of these tools, resources, it is of vital importance that the teacher plans their projects, units and activities using an active, cooperative methodology that allows students to work in teams and they can organize themselves creatively in a space. virtual (De Espinoza et al., 2019). Therefore, to develop this learning, it is proposed to follow a route: (a) Learn to cooperate, it means that the teacher programs actions for collaborative work, organizing the students into teams and generating equal opportunities for each of them, (b) Know how to cooperate, the teacher seeks methodological strategies for students to develop all their cooperative and social skills and (c) Assimilation and understanding, students are aware of this type of work they do, fully identifying themselves through their actions to be carried out in their group (De Espinoza et al., 2019).

Consequently, digital competence is one of the most in demand today, a virtual classroom contributes to the digital improvement of teachers and students using an active methodology in pedagogical work (Romero-Garcia et al., 2020). Nowadays, students need to share more participatory, flexible and active experiences that cover their interests, promoting collaborative learning, digital competences, making students reflect on their own learning, share their knowledge, solve their problems in an assertive way, assume behaviors positive, autonomous, tolerant, respectful of others, assuming that one's effort belongs to everyone and for the entire team (Pinto-Llorente et al., 2019).

Evaluation of collaborative learning in a distance education

To carry out the evaluation of this active methodology, it is essential to have tools and activities to measure learning results such as: (a) Wiki notes, it is a platform used by the teacher and students allows elaborated explanations to be made by organizers such as are the concept maps using the Cmap Tools application, at the end of each topic the teams pose self-evaluation questions, (b) Self-evaluation and co-evaluation, it consists of self-evaluating the work they do at the moment by the same team members and by other members of others teams, to carry out the self-evaluation one of the team members socializes the work, all the members have to present a very similar preparation favoring positive interdependence, (c) Objective test, multiple response is used at the end of the topic, it is a type test that allows evaluating theoretical knowledge under equal conditions ions and (d) Satisfaction level survey, is applied after their final qualification in order to measure the efficiency of the pedagogical and didactic strategies used during the development of the activity (Navarro et al., 2019).

The objective of this research is aimed at the analysis, reflection of collaborative learning, an active methodology in distance education.

2. Methods

In this research, the literature was reviewed analyzing the conception of collaborative learning, its characteristics, importance, strategies, evaluation in a distance context. The methods used were descriptive and explanatory documentary analysis-synthesis (Fidias et al., 2016). For the search of the articles, the Boléan connectors were used with the variables written in Spanish and English between the years 2017 to 2021, the information is based on the synthesis of 43 articles, the research consisted of collecting research that respond to the object of study which were investigated through the full text, open access, to be clarified in a table and referenced with the Mendeley program.

In the inclusion criteria, scientific articles were considered in indexed journals related to collaborative learning, an active methodology at the different educational levels considering journals in Spanish and English. Likewise, the exclusion criteria included different traditional methodologies and those articles that had been published in years prior to 2017, research that had no relation to the topic, and articles from non-indexed journals.

3. Results

When performing the analysis of a variety of articles related to collaborative learning in distance education, it is evident that it is very satisfactory to apply this methodology, because the student increases their academic performance and social competence, (Rodríguez-Borges et al., 2020), in his quantitative, applied, experimental research, obtained as a result to improve the dimensions of collaborative learning, such as individual responsibility, personal effort depends on the success of the other team members. In addition (Gutiérrez-Fresneda et al., 2020), in their research with a quasi-experimental design, a population of 386 children showed that the application of collaborative learning improves access to the writing system, for this, it is important to count the participation of The parents, through cooperative dynamics, in turn, improves the lexical and semantic development as well as the

written language in students of five and six years of age, it is shown that students can learn to read and understand texts using this methodology.

Collaborative learning in the current context needs the continuous support of parents (Santos Rego et al., 2018), in their quasi-experimental design research, the students were distributed by groups 146 in experimental and 123 in control, 8 teachers and 89 parents demonstrated that planning had a positive effect with respect to the level they had, in turn they have improved study habits, the results of repeating students are better, they have increased their school performance.

On the other hand, (Herrada&Baños, 2018), in their review research, they came to the conclusion that collaborative learning improves student performance, developing competencies in experimental sciences, banishing the merely traditional teaching and achieving that they carry out the investigation processes collectively. Likewise, (Bedregal-Alpaca et al., 2020), in their research carried out, showed that making use of this methodology transforms teaching-learning into spaces of interaction, students improved the culture of investigating in groups, achieving skills and aptitudes by applying the use of information technology, respecting diversity and equitable participation.

In the same way, collaborative learning in the inquiry process, research (González-Jaramillo et al., 2021), in their quasi-experimental design study carried out on 109 students, with a quantitative approach, showed that by using this methodology the students improved the inquiry process, developing skills such as: observation, analysis, critical capacity, argumentation and assertive communication of their conclusions, except for the groups that continued to use the conventional teaching-learning method.

In addition, (Bermejo et al., 2020), in their study of 156 students, formed by groups, they managed to promote values in the area of physical education, interaction in heterogeneous work groups, awareness to carry out the contents, achieving that students internalize their learning in a climate of respect, empathy and tolerance. However, in some of these groups and areas applied throughout their process, it can also be seen that collaborative learning is not applied in its full sense of expression, showing that there are group institutions that develop traditional activities, obtaining as a result learning memory, despite the fact that nowadays we work with a constructivist approach.

It is important to note that some research has demonstrated the efficiency of this methodology, obtaining as a result a social competence (Sanchez Marin et al., 2019), in a non-experimental qualitative study, with 126 participants demonstrated that with the use of this methodology, learning collaborative teachers and students empower themselves in the use of technological tools and resources. In turn, (Izquierdo Rus et al., 2019), in a descriptive, cross-sectional, non-experimental quantitative design investigation with 523 students, they came to the conclusion that to achieve a high level of collaborative learning, teachers have a important mission, which is to determine the educational work, planning and projecting the management of this type of work, when carrying out their projects they obtained significant results in the learning of the students.

Collaborative learning in initial, primary schools (Sánchez-Miguel et al., 2020), in their research showed that teachers have the ability to manage collaborative learning in a reliable, creative way, willing to make significant changes.

It is important to note that collaborative learning in vulnerable socioeconomic contexts is of vital importance (Aparicio-Molina &Sepúlveda-López, 2019), in their qualitative research, they used interviews to collect information, they showed that this methodology is essential to apply them in these environments to avoid school dropout, motivate the emotional state of the participants.

Collaborative learning in the current context requires active methodologies for personal and professional development, (Juarez-Puliddo M; Rasskin, Irina; Mendo, 2019), in their study they demonstrated that collaborative learning strengthens social competence in students, involves to students with special needs and even reduces bullying due to the adequate coexistence that exists when applying it.

In addition, (Torres-Gordillo et al., 2020), in a descriptive research, mixed with the participation of 11 professors and 852 students, it was evidenced that the use of Slack technology favors the use of this methodology, claiming that there is a satisfaction at all times when carrying out teamwork.

Collaborative learning has not only proven to be effective in the teaching-learning process, but has also been used in the socio-affective field

(Garrote et al., 2019); In his observational research, with a population of 66 university students, it is evident that the students have managed to develop their social competencies, measured through formative evaluation using the self-evaluation and co-evaluation technique with the instrument called the rubric.

It should be added that collaborative learning produces changes in the participant (Arbañil, 2019), in his correlational, descriptive research, he used surveys, questionnaires, a sample of 54 participants, demonstrated that the use of leadership dimensions such as: charismatic, emotional, anticipatory, participatory, administrative with the dimensions of collaborative learning, they demonstrated that a leader by applying this methodology generates a climate of trust, makes the group feel good, solves problems in a positive way, allows collaborative work efficiently and positive.

On the other hand, in the area of mathematics, this active methodology (Moscoso et al., 2018), in its quantitative, applied, descriptive research, quasi-experimental design, used the survey, population 320, sample 64 students, they showed that collaborative learning influences significantly in the teaching-learning process in the area of mathematics, managing to mobilize all their mathematical abilities such as: reasoning, demonstration, problem solving and mathematical communication, raising the student's cognitive process.

4. **Discussion**

Collaborative learning will always be considered as an essential methodology in all areas, it is immersed as a transversal approach, for its execution, didactic techniques are needed to achieve

competencies (Estrada et al., 2019).

By capturing collaborative learning, students achieve individual and group benefits, improving their academic performance (Bustamante, 2017); This research coincides with the research of (Rodríguez-Borges et al., 2020) If this methodology is not taught in classrooms at all levels, the only thing that will be achieved is to prepare passive, uncritical, communicative students, demonstrating low performance and emotional instability.

Likewise, teachers have the fundamental role of planning projects, proposing meaningful activities, creating pleasant and interesting virtual classrooms for all students, starting from their needs and interests to transform them according to the curriculum (Domingo-Coscollola et al., 2018) ; this research coincides with (Izquierdo Rus et al., 2019). Unfortunately, there are teachers who are unaware of this methodology and the way to apply it and continue to use methodologies that are not very dynamic, attractive and according to the interests of the students.

In the same way, there are other investigations with different subjects such as physical education, mathematics, science, experimentation, inclusion that use collaborative learning as a methodology, for the achievement of the desired competencies, the authors who coincide with obtaining very good results. with the investigations are the following: (Herrada&Baños, 2018; González-Jaramillo et al., 2021; Bermejo et al., 2020; Moscoso et al., 2018); In the same way, collaborative learning improves the teaching-learning of students by creating in them a personal, professional satisfaction and a social competence, making them autonomous, creative, innovative and solve challenging situations (Garrote et al., 2019) this research coincides with (Aparicio-Molina &Sepúlveda-López, 2019).

Collaborative learning in distance education promotes the use of technological tools and resources to achieve competencies, which is why this interactive methodology has the appropriate dimensions for its execution (Torres-Gordillo et al., 2020); coincides with the research of (Sanchez Marin et al., 2019).

However, collaborative learning is a fundamental methodology to be used in places with a very low economic situation, where students do not have what is necessary, for this the teachers can turn these classrooms into interactive, fun, raising their cognitive and socio-affective level of the students (Aparicio-Molina &Sepúlveda-López, 2019).

Agreeing with (RamÍrez& Carrasco, 2020; Garrote et al., 2019) when they point out that socio-emotional discursive strategies have an extremely important effect on performance when working in teams, generating high expectations when carrying out their activities, in turn producing in the Students have a positive assessment of the functioning of the group, they express their continuous support among all the participants, increasing more and more their expectations and achievements in their learning. In the current context, this socio-emotional support is of vital importance, which is why educational institutions must impart this type of strategies to help students overcome any challenge that arises in their daily lives.

In the same way, the successful development of this collaborative learning methodology in this distance context allows teachers, students to incorporate digital skills, necessary to carry out group work, in turn, it complies with the transversal competence that unfolds in virtual environments generated by the ICT that is embodied in the curriculum, awakening the interest of students, generating in them new challenges in their pedagogical work (Fernández et al., 2021).

5. Conclusions

Collaborative work is a relevant strategy to apply at all levels of the educational system, an active learning methodology guarantees high performance in each of the students in an academic, cognitive, psychological and socio-educational way. Likewise, it can continue to be implemented in the remote mode using tools such as the forum, videoconferences, chat, wiki or other digital resources such as telegram or WhatsApp, Instagram, Facebook, which is the perfect combination to achieve interaction between students.

The application of this collaborative strategy allows students to be comprehensively trained by developing skills, such as leadership practice, assertive communication, autonomy, group work, decision-making, critical position, division of tasks, coordination by working in teams, conflict resolution and preparing them to face life's challenges successfully.

For this methodology to be functional, the teacher has the responsibility of planning projects, units, activities that promote teamwork, knowledgeable about the use of technology, so that the student feels in a space of trust and they appropriate this new knowledge. and virtual environments. Likewise, it is worth mentioning that this strategy helps the teacher to improve the climate in the classroom in the face of conflict situations as well as in the low performance of students, evidencing a good coexistence and avoiding the practice of disruptive behaviors.

6. References

Agredo-Delgado, V., Melenje, P. H. R., Collazos, C. A., Moreira, F., & Fardoune, H. M. (2020). Methodological guidelines catalog to support the collaborative learning process. *Education in the Knowledge Society*, *21*, 51–516. https://doi.org/10.14201/eks.22204

Aparicio-Molina, C., & Sepúlveda-López, F. (2019). *Trabajo colaborativo docente: nuevas perspectivas para el desarrollo docente. Teachers´ collaborative work: new toward for teacher´s development. Carolina Aparicio-Molina, Felipe Sepúlveda-López*. *15*, 119–133. https://doi.org/10.18004/riics.2019.junio.119-133

Arbañil, M. (2019). *Investigación valdizana*. *13*(2), 95–106.

Basogain, X., & Olmedo, M. E. (2020). Integración de Pensamiento Computacional en Educación Básica. Dos Experiencias Pedagógicas de Aprendizaje Colaborativo online. *Revista de Educación a Distancia (RED)*, *20*(63). https://doi.org/10.6018/red.409481

Bedregal-Alpaca, N., Padrón-Álvarez, A., Tupacyupanqui-Jaén, D., & Cornejo-Aparicio, V. (2020).

Research-based learning and cooperative work in civil engineering: Proposed from ICT integration | Aprendizaje basado en investigación y trabajo cooperativo en ingeniería civil: Propuesta desde la integración de las TIC. *Proceedings of the LACCEI International Multi-Conference for Engineering, Education and Technology*, *July 2020*, 27–31.

Bermejo, J. M., Pulido, D., Galmés, A. M., Serra, P., Vidal, J., & Ponseti, F. J. (2020). Educación física y universidad: Evaluación de una experiencia docente a través del aprendizaje cooperativo. *Retos*, *2041*(39), 90–97. https://doi.org/10.47197/retos.v0i39.77834

Bustamante, J. (2017). El aprendizaje cooperativo:: Una competencia imprescindible. *Educación Superior*, *2*(1), 25–36. http://www.scielo.org.bo/scielo.php?script=sci_arttext&pid=S2518-82832017000100003&lng=es&nrm=iso&tlng=es

Cabero-Almenara, J., Barroso-Osuna, J., Rodríguez-Gallego, M., & Palacios-Rodríguez, A. (2020). La competencia digital docente. El caso de las universidades andaluzas. *Aula Abierta*, *49*(4), 363–371. https://doi.org/10.17811/RIFIE.49.4.2020.363-372

Castillo, I., & Suárez, B. (2020). Una experiencia inclusiva de aprendizaje cooperativo: Fomentando habilidades para el empleo en la universidad. *Siglo Cero Revista Española Sobre Discapacidad Intelectual*, *51*(2), 55. https://doi.org/10.14201/scero20205125572

Cornide-Reyes, H., & Villarroel, R. (2019). Método para Promover el Aprendizaje Colaborativo en Ingeniería de Software. *Formación Universitaria*, *12*(4), 3–12. https://doi.org/10.4067/s0718-50062019000400003

De Espinoza, I., Muñoz, Y., & Torrego, J. C. (2019). Implicaciones de la formación del profesorado en aprendizaje cooperativo para la educación inclusiva. *Profesorado*, *23*(4), 128–151. https://doi.org/10.30827/profesorado.v23i4.9468

de la Barra, E., & Carbone, S. (2020). Bridging inequality: Cooperative learning through literature in two vulnerable schools in santiago. *Profile: Issues in Teachers' Professional Development*, *22*(2), 49–63. https://doi.org/10.15446/profile.v22n2.81384

Domingo-Coscollola, M., Onsès-Segarra, J., & Sancho-Gil, J. (2018). DIY culture in primary school. Transdisciplinar and collaborative learning shared in DIYLabHub. *Revista de Investigacion Educativa*, *36*(2), 491–508. https://doi.org/10.6018/rie.36.2.304421

Estrada, J. A. C., González-Mesa, C. G., Llamedo, R., Martínez, B. S., & Pérez, C. R. (2019). The impact of cooperative learning on peer relationships, intrinsic motivation and future intentions to do sport. *Psicothema*, *31*(2), 163–169. https://doi.org/10.7334/psicothema2018.305

Fernández, E. (2020). Analysis of teaching strategies, supported in the use of ict, to promote the cooperative learning of the university student of the degree of pedagogy. *Revista Interuniversitaria de Formacion Del Profesorado*, *34*(2), 79–100. https://doi.org/10.47553/rifop.v34i2.77628

Fernández, Larrondo, A., & Meso, Koldobika, Pérez, J. (2021). Aprendizaje colaborativo en grupos virtuales internacionales: creación de reportajes multimedia. *Revista Brasileira de Educação*, *26*, 1–16. https://doi.org/10.1590/s1413-24782021260032

Fidias, G., Arias, & Libertador. (2016). *EL PROYECTO DE INVESTIGACIÓN 6a EDICIÓN* (Issue July 2012).

García-Chitiva, M. D. P. (2021). Aprendizaje colaborativo, mediado por internet, en procesos de educación superior. *Revista Electrónica Educare*, *25*(2), 1–19. https://doi.org/10.15359/ree.25-2.23

García-Quismondo, M. Á. M., & Cruz-Palacios, E. (2018). Gaming as an educational material for digital competences in education from Academic Skills Centres. *Revista General de Informacion y Documentacion*, *28*(2), 489–506. https://doi.org/10.5209/RGID.62836

Garrote, D., Jiménez-Fernández, S., & Martínez-Heredia, N. (2019). El Trabajo Cooperativo como Herramienta Formativa en los Estudiantes Universitarios. *REICE. Revista Iberoamericana Sobre Calidad, Eficacia y Cambio En Educación*, *17*(3), 41–58. https://doi.org/10.15366/reice2019.17.3.003

González-Jaramillo, V., Greca, I., & González, S. (2021). Human nutrition: Evaluation of a multidisciplinary didactic proposal based on enquiry and collaborative learning. *Investigacoes Em Ensino de Ciencias*, *26*(1), 188–212. https://doi.org/10.22600/1518-8795.ienci2021v26n1p188

Gutiérrez-Fresneda, R., de Vicente-Yagüe Jara, M. I., & Jiménez-Pérez, E. (2020). Effect of cooperative work on learning to write through family involvement. *Estudios Sobre Educacion*, *39*, 229–246. https://doi.org/10.15581/004.39.229-246

Herrada, R. I., & Baños, R. (2018). Revisión de experiencias de aprendizaje cooperativo en ciencias experimentales. *Revista de Eduación Campo Abierto*, *36*, 157–170. https://doi.org/10.17398/0213-9529.37.2.157

Izquierdo Rus, 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

Johnson, D. W., Johnson, R. T., & Holubec, E. J. (1999). El aprendizaje cooperativo en el aula-Cooperative Learning in the classroom. In *(Ascd)*. https://s3.amazonaws.com/academia.edu.documents/33597188/El_aprendizaje_cooperativo_en_el_aula.pdf?AWSAccessKeyId=AKIAIWOWYYGZ2Y53UL3A&Expires=1523202421&Signature=14%2FtbeRvkjp271elPkF5TnBK%2FcE%3D&response-content-disposition=inline%3B filename%3DEl_apr

Juarez-Puliddo M; Rasskin, Irina; Mendo, S. (2019). R e v i s ta P r i s m a S o c i a l Nº 26 EL APRENDIZAJE C O O P E R AT I VO , U N A M E TO D O LO G Í A AC T I VA PA R A L A E D U C AC I Ó N D E L S I G LO X X I : U N A R E V I S I Ó N. *El Aprendizaje Cooperativo, Una Metodologia Activa Para La Educacion*

Del Siglo XXI: Una Revisión Bibliografica.

Juárez-Pulido, M., Rasskin-Gutman, I., & Mendo-Lázaro, S. (2019). Cooperative learning, an active methodology in the 21st century: A review. *Prisma Social*, *26*, 200–210.

Lizcano-Dallos, A. R., Barbosa-Chacón, J. W., & Villamizar-Escobar, J. D. (2019). ICT-aided collaborative learning: Concept, methodology and resources. *Magis*, *12*(24), 5–24. https://doi.org/10.11144/Javeriana.m12-24.acat

Luna, J. C. (2021). El aprendizaje colaborativo en la enseñanza de la Matemática a nivel de pregrado. *Delectus*, *4*(1), 129–138. https://doi.org/10.36996/delectus.v4i1.71

Moscoso, B. B., Cáceres, M. C., & Cáceres, C. C. (2018). El método colaborativo como estrategia metodológica y su influencia en el aprendizaje de la Matemática en los estudiantes del primer ciclo de la Universidad Nacional Micaela Bastidas de Apurímac - Perú. *Proceedings of the LACCEI International Multi-Conference for Engineering, Education and Technology*, *2018-July*(July), 19–21. https://doi.org/10.18687/LACCEI2018.1.1.414

Muñoz-Repiso, A. G. V., & Tejedor, F. J. T. (2018). Valoración del trabajo colaborativo en los procesos de enseñanza-aprendizaje en entornos escolares con alto nivel TIC. *Estudios Sobre Educacion*, *34*, 155–175. https://doi.org/10.15581/004.34.155-175

Navarro, I., González, C., López, B., & Contreras, A. (2019). Aprendizaje cooperativo basado en proyectos y entornos virtuales para la formación de futuros maestros. *Educar*, *55*(2), 519–541. https://doi.org/10.5565/rev/educar.935

Ortiz, J. R. M., Landa, A. J. C., Flores, I. A. R., & Arrioja, I. E. R. (2019). Propuesta metodológica para el trabajo colaborativo en autoevaluaciones de acreditación utilizando herramientas digitales. *Tecnología Educativa Revista CONAIC*, *6*(2), 68–75. https://doi.org/10.32671/terc.v6i2.96

Pinto-Llorente, A. M., Gómez-Pablos, V. B., & Izquierdo-álvarez, V. (2019). The improvement of learning and the development of university students' competences through collaboration. *Revista Lusofona de Educacao*, *45*(45), 257–272. https://doi.org/10.24140/issn.1645-7250.rle45.17

RamÍrez, J. C. C., & C, Shamaly, N. (2020). Aprendizaje colaborativo en lÍnea, una aproximaciÓn empÍrica al discurso socioemocional de los estudiantes Collaborative Online Learning, an Empirical Approach to Students' Socio-Emotional Discourse. *Revista Electronica de Investigacion Educativa*, *22*, 1–12. https://doi.org/10.24320/redie.2020.22.e20.2329

Reyes-Garcés, É., Fernández-Peña, F., Pérez-Nata, W., & Urrutia-Urrutia, P. (2018). App Sigma and Facebook Groups: Evaluation of the usability and technology acceptance by software engineering students of Universidad Técnica de Ambato in Ecuador. *Formacion Universitaria*, *11*(5), 65–74. https://doi.org/10.4067/S0718-50062018000500065

Reyes, M., & Reyes, Á. (2017). Aprendizaje cooperativo: Estrategia didáctica y su impacto en el aula. *XIV*

Congreso Nacional de Investigación Educativa-COMIE, *XIV*, 1–11.

Rodríguez-Borges, C. G., Bowen-Quiroz, C. A., Pérez-Rodríguez, J. A., & Rodríguez-Gámez, M. (2020). Evaluación de las capacidades de aprendizaje colaborativo adquiridas mediante el proyecto integrador de saberes. *Formación Universitaria*, *13*(6), 239–246. https://doi.org/10.4067/s0718-50062020000600239

Romero-Garcia, C., Buzón-García, O., & de Paz-Lugo, P. (2020). Improving future teachers' digital competence using active methodologies. *Sustainability (Switzerland)*, *12*(18), 1–15. https://doi.org/10.3390/SU12187798

Sánchez-Miguel, P., Mendo-Lázaro, S., Barco, B., Amado, D., & Iglesias-Gallego, D. (2020). Escala de Gestión del Aprendizaje Cooperativo en el Aula. *Revista Iberoamericana de Diagnóstico y Evaluación – e Avaliação Psicológica*, *56*(3), 59. https://doi.org/10.21865/ridep56.3.05

Sánchez - Molina, A., González - Martí, I., & Hernández - Martínez, A. (2021). Percepción del profesorado de Educación Física sobre el Aprendizaje Cooperativo y su relación con la Inteligencia Emocional (Physical Education teacher´s perception of Cooperative Learning and its relation to Emotional Intelligence). *Retos*, *41*, 735–745. https://doi.org/10.47197/retos.v41i0.86198

Sanchez Marin, F. J., Concepcion Parra-Merono, M., & Pena-Acuna, B. (2019). Experiences of Cooperative Work in Higher Education. Perceptions About Its Contribution To the Development of Social Competence. *Vivat Academia*, *147*, 87–107.

Santos Rego, M. A., Otero, M. J. F., Otero, A. G., & Moledo, M. del M. L. (2018). Do cooperative learning and family involvement improve variables linked to academic performance? *Psicothema*, *30*(2), 212–217. https://doi.org/10.7334/psicothema2017.311

Silva, H., Lopes, J., & Dominguez, C. (2019). Cooperative learning and concept maps in the promotion of critical and creative thinking: An experience in higher education. *Revista Lusofona de Educacao*, *45*(45), 157–170. https://doi.org/10.24140/issn.1645-7250.rle45.11

Torres-Gordillo, J. J., Garciá-Jiménez, J., & Herrero-Vázquez, E. A. (2020). Contributions of technology to cooperative work for university innovation with Design Thinking. *Pixel-Bit, Revista de Medios y Educacion*, *58*, 1–38. https://doi.org/10.12795/PIXELBIT.74554

Varona-Fernández, M. N., & Hermosa-Peña, R. (2020). Percepción y uso de las redes sociales por adolescentes. *RqR Enfermería Comunitaria*, *8*, 18–30.

Rani, Yedidi Mercy. "Task Based Language Teaching In Promoting The Target Language Culture Through Idioms And Proverbs-A Case Study." International Journal of Linguistics and Literature (IJLL) 6.1 (2017): 1-10.

Lalitha, Syamala. "Magnitude of Interaction and Collaboration in Teaching and Learning." International Journal of Linguistics and Literature (IJLL) 6.1: 11-18.

Naz, Sabahat, and Kalpana Dixit. "To Study the Scientific Concept Structure of Science Students Studying in MP Board and CBSE Schools of Bhopal by using Concept Attainment Technique." International Journal of Applied and Natural Sciences (IJANS) 5 (2016): 1-6.

Rai, Dona. "A Study on Children'S Academic Achievement and Their Curiosity." International Journal of Humanities and Social Sciences (IJHSS) 7.5 (2018): 39-44.

Kannan, B. Maruthu, and B. G. Barki. "web assisted collaborative learning to teach design engineering–a pragmatic approach." Research and Development (IJAuERD) 3.2 (2013): 51-58.

Srinivasa Rao, A. B., P. M. Kumar, and P. S. Aithal. "Strategic Planning in Higher Education Institutions: A Case Study of SIMS-VISION 2025." International Journal of Educational Science and Research (IJESR) ISSN (P) (2015): 2249-6947.