

# The Value Of Learning Environments: From Collaboration To Cooperation

Pietro Montesano<sup>1,\*</sup> and Maria Giovanna Tafuri<sup>2</sup>

<sup>1</sup> University of Naples “Parthenope”, Naples –Italy; pieromontesano@libero.it

<sup>2</sup> Pegaso University, Naples –Italy; tafurimariagiovanna@gmail.com

\* Correspondence: pieromontesano@libero.it

**Abstract:** Collaboration, in general, presupposes an executive and/or managerial figure to whom it refers, while cooperation configures a relationship between equals. Collaborative learning, which is also useful for building an online community with teachers/trainers who must create the basis for developing e-learning forums-team-blogs, can allow learners to take advantage of help. Moreover, with the learning times of each one, recognize and enhance awareness and self-esteem and then embark on the cooperative path that involves comparisons, problem solving, successes and failures to be shared among peers. The appropriate design of a learning environment, the structuring of a group, the use of participatory techniques and group work are the prerequisites for the achievement of common goals.

**Keywords:** Collaboration, cooperation, team, digital teaching.

## 1. Introduction

Learning is a process that significantly modifies the possibilities of interaction of an individual with the environment and, therefore, his adaptive behavior. The relationship between learning and development is of fundamental importance. It is characterized by a complex articulation which intersects biological-psychological-sociological-philosophical aspects and can be analyzed in relation to different disciplinary areas and different knowledge (Archambault et al., 2022). Each of these forms of knowledge connotes and thematizes the relationship in a different way, and the learning-development relationship implies the analysis of the learning-education relationship which, expressed as an inseparable binomial, synthesizes and highlights the main problems that have characterized and characterize the contemporary pedagogical debate (Sanger, 2020). Education, as an intentional act referable to aims, values, objectives, goals, is always susceptible to pedagogical problematization that assumes as a regulative criterion the hypothesis that something with a value (culturally recognized and shared) or, in any case, with normative implications, is realized. Learning, as an original attitude of the species is characterized by a bio-psycho-physiological instinct that disregards aim, values, objectives, goals and regulatory implications, even if it is clear that an instinctual learning process, detached from an environmental, social, cultural and historical context, is difficult to achieve.

Learning is, in fact, always linked to a series of stimuli that condition its organization, intentional or not, and which, starting from the Central Nervous System (CNS), are transmitted through connections, *synapses*, of nerve cells, *neurons*. The patrimony of nerve cells is present from birth, but it is in the postnatal period that synapses develop selectively *and* adaptively, increasing numerically until about fifteen years of age. Learning is, therefore, a fundamental condition of the



**Copyright:** © 2024 by the authors. Submitted for possible open access publication under the terms and conditions of the Creative Commons Attribution (CC BY) license (<https://creativecommons.org/licenses/by/4.0/>).

educational process, just as the educational process is configured as the environment in which the learning process is enriched with specifically human characteristics. The learning-education relationship, from an ontogenetic point of view, highlights that the basic learning structure consists in the formation of anatomical connections between brain cells, *neurons*, still developing. It represents a structure of connection with the external environment that is organized in the first months of life, fixing the forms of mental processes, but which is modified and enriched during development (Closs et al., 2022). The learning-development relationship becomes even clearer if we analyze the role that *brain plasticity plays in it*, the quantitative and qualitative way in which the brain responds to environmental stimuli starting from the basic learning structure, which is proportional to the time of development. Plasticity is a particular adaptive process that manifests itself in the nervous system and gives rise to various forms of learning, such as phyletic and intelligent, which are interdependent with the experiential data.

In this context, the school has the task of producing stimuli aimed at a process of growth in a positive sense, considering the potential for individual development and diversity, finalizing efforts to *the creation* of suitable learning environments. In the common perception, the learning environment is identified as a physical space, laboratory, classroom, library, software, e-learning platform, but some characteristics are to be considered as invariant elements connoting the environment such as the attitude of students and teachers towards learning; the methods of communication and interaction with students; the role of the School Principal, the role of teachers, the role of students and the value of the Guidelines for the Programs and for the Curriculum (Tabuenca et al., 2021).

## 2. Learning Environments

The adequate design of a learning environment testifies to the transition from a vision based on transmissive teaching to a teaching dimension focused on the learner and therefore on his processes with regard to the facilitation, guidance, accompaniment of students in the construction of knowledge. It can be represented and created both as a physical or virtual place and as a mental and cultural space, organizational and emotional-affective (Barari et al., 2022). It is a space of action created to stimulate and support the construction of knowledge, skills, motivations, attitudes in which interactions and exchanges occur between students, recipients of knowledge, and teachers, based on common interests and goals. Students are offered the opportunity to *have experiences* on a cognitive, affective-emotional, interpersonal-social level in a context of structured activities. It should be intentionally prepared by the teacher, in which teaching is organized in a manner that the learning process promoted takes place according to the expected methods, inspired by appropriate personalized teaching methodologies and by knowing how to master techniques and support tools such as Information and Communication Technology (ICT) and multimedia aids.

The collaborative dimension of learning cannot be separated from the definition of methods and approaches that guarantee the interpersonal relationship between students and between students and teachers, while encouraging the use of technological tools, to develop inclusiveness and reduce the risk of self-marginalization and isolation, in society and in school, with the aim of also strengthening the fight against early school leaving.

The use of new technologies (Calabrò, 2022) underlies and fosters forms of meaningful learning in a collaborative dimension (Carletti, 2007), related to an appropriate methodological approach, aimed, among other things, at the acquisition

by pupils of knowledge, skills or attitudes that are the result of group interaction. In other words, individual learning as a result of a group process (Asvial et al., 2021).

Learning, namely the construction of knowledge/skills, must be understood, predominantly, as the result of the learner's experiences through a process of both individual and collective construction of agreed meanings and interpretation of non-predetermined experience (Potestio, 2019) and the use of digital technologies can facilitate the overcoming of old paradigms by favoring the transition from the information society to society of knowledge (Cortiana, 2017).

The shift from closed systems, which have long been dominant in both business and school settings (Puspitarini & Hanif, 2019), to open-source systems in which learning is student-centered, has influenced the change in theoretical paradigms, gradually favoring the acceptance of constructivist principles. It is therefore evident how the use of digital resources can make learning more engaging and interactive for students.

The use of applications (apps) and new technologies, including video-games-quizzes-social media (Ansari & Khan, 2020), can foster the personalization of learning by stimulating students to learn in a more active and fun way, increasing motivation and participation. The use of apps and new technologies can also foster cooperation among students who can work together on projects and assignments, share ideas and comments, and collaborate in real time, developing skills such as communication and teamwork (Daniel, 2020). Another important reason why the use of apps and new technologies is important to improve teaching is access to information. Students can access online educational resources, digital libraries, and research tools, thus improving the quality and quantity of information available to them, as well as developing digital skills with a view to a possible entry into the world of work and technology of the future (Cheng, 2022). Ultimately, the use of apps and new technologies in teaching can certainly help to improve teaching activity at school and if teachers use these digital resources with competence and awareness, they can increase the effectiveness of teaching and improve students' learning, preparing them to face challenges for life.

### **3. Educational and formative value of collaborative and cooperative learning in the group**

Educational approaches are often difficult, if not thwarted by the difficulty of communication between peers and between the teacher and learners, and this can affect the teaching/learning process making it difficult to achieve educational objectives.

The experimentation of new contextual solutions and teaching methodologies has indicated *the group and group work* as learning opportunities aimed at encouraging the comparison of students, enhancing, however, the singularities in compliance with the concept of personalization of learning which must, necessarily, consider the harmonization of the different levels of the students.

The group is a learning context in which the stimulus-proposals must be presented wisely to be able to govern, or at least understand, the dynamics (Mucchielli, 1994) that are determined in it. As a rule, all aggregations, whether voluntary or imposed, present conflictual situations that are often amplified within a group. The search for a serene and balanced climate is a fundamental objective to be pursued to allow everyone to express their personality without overpowering that of others.

The group, its constitution, and its therapeutic and educational function (Lewin, 1965; Moreno, 1964), has been the subject of studies and in-depth studies reported

in modern and contemporary literature and must have some characteristics:

1. A collection of people;
2. A common activity;
3. An interpersonal perception;
4. the intentionality to perform the same task.

In fact, the group is a group of people, who carry out a common activity (Trisciuzzi, 2001) and can be constituted in different ways, also making use of participatory techniques such as circle time. The latter is a discussion group (Contini, 2000) centered on a task or problem. Circle Time is one of the main methodologies in socio-affective education and pursues the aim of developing positive interpersonal attitudes, acquiring knowledge and personal skills. It allows the subject to be a good participant in work groups using active listening, empathy, and cooperation skills, contributing to the prevention and promotion of well-being. It is a technique that allows you to reduce tensions, to create a climate of trust with the teacher and with your classmates, to compare different hypotheses and opinions, to know, compare and discuss everyone's learning strategies and to overcome cognitive fixations.

The group is not only a context in which heterogeneous subjects with different characteristics meet, but it favors the establishment of positive relationships through the development of perceptive, control, integration functions (Girelli, 1999) and related skills, which are contrasted by the inevitable conflict situations that can be managed with the detection of specific indicators. The group determines the questioning of the subject not only from the point of view of relationships but particularly from the cognitive point of view. In fact, the confrontation that is generated in a group activates intellectual capacities, which Gardner defines as multiple (Gardner, 2007). The studies related to Gardner's considerations have involved various scholars and Goleman, deepening the emotional aspect of personal intelligence, has analyzed this dimension by supporting the theory of the presence of intelligence in emotions and the consequent educability. He considered not only possible, indeed desirable, and necessary an emotional literac (Goleman, 1996) outlining emotional intelligence in terms of self-awareness, empathy, and the ability to create positive forms of social relationships as later taken up by neuroscience studies. Even more so, if the group is made up in a heterogeneous way even with the presence of a disabled person, it is necessary to design the training course didactically with objectives arising from the real needs highlighted by structuring the objectives through the identification of appropriate indicators and descriptors.

The opportunity to present a training course in which one of the objectives is the transition from *assisted*, collaborative to cooperative learning on an equal footing with others and to face successes and failures with awareness.

Collaborative learning can be a valuable tool. It can take many forms, from classroom games to projects and team building activities, to stimulate student work in groups and therefore an opportunity to collaborate. The choice of activities must be aimed at collaborating to achieve shared educational objectives. It is necessary to avoid the risk of competition that induces students to work, often, in opposition to reach the goal first. Collaboration helps students establish relationships of greater care, mutual support, and commitment to each other. This, in turn, helps to boost their self-esteem and leads to the development of stronger social skills and a higher level of emotional well-being (Grimus, 2020).

Not only that, but collaborative activities provide students with important opportunities to develop other crucial skills that they will need outside of the

classroom. Working together will give them the opportunity to practice oral skills as well as leadership skills, but also develop greater autonomy, critical thinking, *problem-solving* and creativity with the implementation of projects, cooperative games, team building for the development of communication skills.

The transition to cooperative learning can take place after a path at the end of which the achievement of the objectives of awareness, self-esteem and responsibility is verified, with the realization of the comparison between peers and peers for the achievement of common goals using specific techniques (Comoglio & Cardoso 2000).

#### 4. Teamwork

In an educational context, the role of the teacher as facilitator and organizer of training courses is fundamental. The formation of groups, the structuring of specific activities, the involvement of everyone in the work of the group arise from careful observation, continuous feedback, evaluation of the success or failure of group processes and the individual contributions of the participants.

An important aspect in the group process, which must be considered by the teacher, is to ensure that the members of a group working in parallel on a task help each other. On the contrary, if different tasks are given to different members (specialization of tasks), it is important to check that in the end the results flow to the benefit of the group (Alam, 2022). This concept is fundamental in the inclusion of those pupils who bring their skills to the group according to their potential. The theoretical perspectives inherent in collaborative learning in schools and the use of possible technological supports can be associated with the concept that learning is essentially an activity that takes place in common (Bruner, 1984) and that involves the social construction of knowledge; to that peer collaboration in learning helps to develop general problem-solving skills and strategies through the internalization of cognitive processes implicit in interaction and communication (Sempio, 1998). The strengths of collaborative learning also lie in the obligation to make explicit and communicate to others one's knowledge and understanding through verbalization or writing (Vygotskij, 1934) and the motivating value of being a member of a lively group (Rogers & Bhowmik, 1970).

In methodological terms, the next phase after structuring and defining the characteristics of the group is group *work*. If a group is made up of a group of people who have a common interest, all the more reason for group work to include a common purpose for all the members of the group who work, mainly, on a delivery that can be directive (collaboration), namely defined by the teacher/conductor, or participatory (cooperation), namely arising during the structuring phase of the group. Group work, for a heterogeneous group even with the presence of a disabled person, must be planned considering the characteristics of all the members to put everyone in a position to operate at their best and as serenely as possible. In fact, the educational intervention is effectively inserted during the learning processes, but the incidence must be implemented not only when, after a certain process, but a modification of behavior has also been realized and concretized. Nevertheless, we must not underestimate the previous experiences, in turn produced by previous adaptive phenomena.

Therefore, the learning phenomenon can be analyzed in its dual dimension of process and result. The process aspect analyses the process of learning, with an emphasis on its genetic characteristics. The result aspect is related to behavioral changes that are already partly a consequence of a previous result. Thus, learning, both as a process and as a result, can be known as an educational tool, and becomes a goal achieved when it is achieved in a critical experiential situation, often identifiable in the context of concrete situations of relationship between the individual and the social

context (Valtonen et al., 2021).

The learning-educational process takes place when the subject assumes a clear awareness of his own potential but also a full awareness of the external reality that surrounds him, through the process of socialization, not neglecting the teaching/learning setting in which the process of transmission of knowledge and skills between teacher and learner occurs. The process of socialization is responsible for activating a correct relationship between the individual and the social context from the very first days of life. From this point of view, it is desirable that expressiveness be enhanced at all levels, also according to age, to highlight all personal components without neglecting any of them.

## 5. Conclusions

The design of suitable learning environments and the consequent choices to direct students towards forms of collaborative and/or cooperative learning, are always subordinated to the pursuit of the objective of inclusive education. It is based on the principle according to which schools must guarantee all students the maximum development of their learning and socialization potential, regardless of any disability, disorder or other personal and social characteristics. However, the individual must proceed in the direction of an assumption of individual responsibility within the educating community with principles inspired by a culture of inclusion. The latter must allow equal treatment between the so-called able-bodied and learners with special educational needs up to and including certified disabled people.

**Author Contributions:** This article is the result of a study designed and shared between the authors. The Authors intellectually contributed to the manuscript, read the manuscript, and approved the presentation in the same way.

## References

- Alam, A. (2022, March). Educational robotics and computer programming in early childhood education: a conceptual framework for assessing elementary school students' computational thinking for designing powerful educational scenarios. In *2022 International Conference on Smart Technologies and Systems for Next Generation Computing (ICSTSN)* (pp. 1-7). IEEE.
- Ansari, J. A. N., & Khan, N. A. (2020). Exploring the role of social media in collaborative learning the new domain of learning. *Smart Learning Environments*, 7(1), 1-16.
- Archambault, L., Leary, H., & Rice, K. (2022). Pillars of online pedagogy: A framework for teaching in online learning environments. *Educational Psychologist*, 57(3), 178-191.
- Asvial, M., Mayangsari, J., & Yudistriansyah, A. (2021). Behavioral intention of e-learning: A case study of distance learning at a junior high school in Indonesia due to the covid-19 pandemic. *International journal of technology*, 12(1), 54-64.
- Barari, N., RezaeiZadeh, M., Khorasani, A., & Alami, F. (2022). Designing and validating educational standards for E-teaching in virtual learning environments (VLEs), based on revised Bloom's taxonomy. *Interactive learning environments*, 30(9), 1640-1652.
- Bruner, J. S. (1984). Contexts and formats. *Le langage: construction et actualisation*. Rouen: Publications de l'Université de Rouen, 69-79.
- Calabrò, A. I. (2022). Didattica e nuove tecnologie. *Didattica e nuove tecnologie*, 171-175.

- Carletti, A. (Ed.). (2007). *Ambienti di apprendimento e nuove tecnologie: Nuove applicazioni della didattica costruttivista nella scuola*. Edizioni Erickson, Trento.
- Cheng, Y. C. (2022). *School effectiveness and school-based management: A mechanism for development*. Taylor & Francis.
- Closs, L., Mahat, M., & Imms, W. (2022). Learning environments' influence on students' learning experience in an Australian Faculty of Business and Economics. *Learning Environments Research*, 25(1), 271-285.
- Comoglio M., Cardoso M.A. (2000), *Insegnare ed apprendere in gruppo. Il cooperative learning*, LAS, Roma.
- Contini M.G.(2000), *Il gruppo educativo*, Carocci, Roma.
- Cortiana, P. (2017). Promuovere la scrittura attraverso le nuove tecnologie. *Formazione & insegnamento*, 15(1), 153-164.
- Sanger, C. S. (2020). Inclusive pedagogy and universal design approaches for diverse learning environments. *Diversity and inclusion in global higher education: Lessons from across Asia*, 31-71.
- Daniel, S. J. (2020). Education and the COVID-19 pandemic. *Prospects*, 49(1), 91-96.
- Gardner, H. (2007). The ethical mind. A conversation with psychologist Howard Gardner. *Harvard Business Review*, 85(3), 51-6.
- Girelli C. (1999), *Costruire il gruppo*, Editrice La Scuola, Brescia.
- Goleman D. (1996), *Intelligenza emotiva*, Rizzoli, Milano Lewin K. (1961), *Principi di psicologia topologica*, O.S., Firenze.
- Grimus, M. (2020). Emerging technologies: Impacting learning, pedagogy and curriculum development. *Emerging technologies and pedagogies in the curriculum*, 127-151.
- Lewin K. (1965), *Teoria dinamica della personalità*, Ed. Universitaria, Firenze
- Moreno J.L. (1964), *Principi di sociometria, psicoterapia di gruppo e sociodramma*, Etas Kompass, Milano
- Mucchielli R. (1994), *La dinamica di gruppo*, Elle Di Ci Editrice, Leumann, Torino
- Potestio, A. (2019). La relazione educativa tra tradizione e nuove tecnologie. *CQILA Rivista*, 8.
- Puspitarini, Y. D., & Hanif, M. (2019). Using Learning Media to Increase Learning Motivation in Elementary School. *Anatolian Journal of Education*, 4(2), 53-60.
- Rogers, E. M., & Bhowmik, D. K. (1970). Homophily-heterophily: Relational concepts for communication research. *Public opinion quarterly*, 34(4), 523-538.
- Sempio Liverta O. (1998), *Vygotskij, Piaget, Bruner. Concezioni dello sviluppo*, Raffaello Cortina, Milano
- Tabuenca, B., Serrano-Iglesias, S., Martin, A. C., Villa-Torrano, C., Dimitriadis, Y., Asensio-Pérez, J. I., ... & Kloos, C. D. (2021). Affordances and core functions of smart learning environments: A systematic literature review. *IEEE Transactions on Learning Technologies*, 14(2), 129-145.
- Trisciuzzi L. (2001), *Manuale di Didattica*, ETS, Pisa.
- Valtonen, T., Leppänen, U., Hyypiä, M., Kokko, A., Manninen, J., Vartiainen, H., ... & Hirsto, L. (2021). Learning environments preferred by university students: a shift toward informal and flexible learning environments. *Learning Environments Research*, 24, 371-388.
- Vygotskij L. S. *Pensiero e linguaggio*, (1934), trad. Costa Fara A., Gatti M. P., Veggetti M. S. (1966), Giunti Barbera, Firenze.