ABSTRACT

In this article, we realize the epistemological weakness of pedagogy, after reviewing the specialized bibliography in which there is a very wide spectrum of references with respect to its nature, from those that justify and proclaim its scientific character, to the positions that deny it. For a discipline to be recognized as scientific, it is necessary that the body of knowledge that constitutes it has been produced with the application of the scientific method, so that the hypotheses it supports have passed the test of falsity or some other test, such as verifiability or corroboration that allows it to be distinguished from what is not science. The central hypotheses of pedagogy have not passed these requirements, so it is not possible to defend their scientific character. On the other hand, the terminological and conceptual proliferation that we have found, highlights the weakness of its epistemological bases.

Keywords: Science; Technology; Andragogy; Pedagogy; Types of Pedagogies; Teaching; Learning.

INTRODUCTION

The terminological and conceptual proliferation around pedagogy, education and other terms that share this semantic field, forces us to review the epistemological foundations of pedagogy and not of education, since this is a task and responsibility of a certain society, which must comply to continue to exist and reproduce. Or, according to Rousseau, it is indefinite when he confesses that in learning Latin he also had to learn “all the rubbish that surrounds his teaching and which they call education.” (Rousseau, 1963).

But there is interest from many researchers to configure a scientific discipline for education. This is how many maintain that this science is Pedagogy, while others postulate that it is the Theory of Education and
Pedagogy is not a logos; it is not a set of knowledge that seeks to describe and explain the educational phenomenon. Pedagogy is an agein, an accompaniment, an action, an etymological sense that prevails in the absence of logos. In case Pedagogy is the logos that describes and explains education, it would be a Pedagogy or a term that is coined opportunistically and is more precise. For some, this term is Educology, with which reference is made to the logos sought. (Rubina López, A. (2022)

In the present investigation, we have detected that pedagogy is not a logos. However, the referenced bibliography shows that it is, that it is a body of knowledge about education. But what we find in Pedagogy is a set of normative prescriptions that establish how the teaching and learning processes should be developed or conducted.

Our purpose is to locate and identify the epistemological foundations of Pedagogy, which provide evidence of its nature as a scientific theory or technology.

The title of the article by Mario Díaz Villa, what is this called pedagogy? confirm what we have been saying. The terminological and conceptual proliferation in this discipline, and the different perspectives from which it is studied, hamper its descriptive and explanatory capacity, typical of a science, and associate it more firmly with technological prescriptions, that is, with the how to do. (Díaz Villa, M. 2019).

Laurencio, A., after wondering about what pedagogy does, concludes with a fundamental question: Why not consider pedagogy as the discipline that is dedicated to investigating the ways and means to make education more efficient, in each of the stages of human life, and in each era? Is this not a fundamental contribution to humanity? Why, then, continue with the argument about the scientific validity of pedagogy? It is that what pedagogy does is prescribe and not explain. (Laurence, A. 2021).

Nelson Campos Villalobos reworks the classic argument that for a discipline to be recognized as scientific, it must have its own field of study, a body of validated content, its own language, methodological autonomy, formulation of its own principles, theories, and hypotheses (Campos -Villalobos, N. 2021).

However, Germán Vargas assumes a critical stance by arguing that “the so-called Faculties of Educational Sciences do not claim or think about doing pure science but are after immediate applications. The purpose of these Faculties is not in research as a first obligation, but in the training of teachers for basic and middle school. For the same reason, they do not intend to train scientists, but rather teachers, and this is demonstrated by the study plans. These university schools do not intend and have not intended to advance knowledge in each science, otherwise they would be made up of first-rate doctors and scientists and research would be their main task. Let us put our feet on the ground: if the function of teacher training schools is not clear, then the name of educational sciences will only be an artificial way of raising the prestige of the entity. We need more episteme and less doxa to clarify the role that the so-called educational sciences must play in their search for epistemological capacity to integrate the knowledge that they are separately producing. Task that was always clearly determined by the philosophy of education and by the old and wise pedagogy.” This argument allows him to conclude by assuming that in “a world tired of scientism and calculating reason, pedagogy can maintain itself at the level of rigorous and objective knowledge that fully fulfills the human spirit; objectification where the recourse to reason is maintained, perhaps already based on intuition, sensitivity, emotion, in forms of experiences that allow us more than to predict, anticipate, project and illuminate proposals of authentic and universal humanity born of our particular situation, from our own experience of being. (Vargas, German, 2021).

Piaget, when referring to the research carried out in Pedagogy, draws attention by saying that this is a discipline without researchers, alluding to those who have contributed to the production of knowledge in this discipline are philosophers like Rousseau or Dewey, Doctors, like Montessori, Psychologists like Piaget or Vygotsky himself or sociologists like Durkheim. (Piaget, 1978).

METHODOLOGY

Applying the documentary analysis methodology and the comparative studies methodology, we have reviewed and confronted the points of view of researchers who deal with Pedagogy. The first of them is Herbart, who maintains that pedagogy is the art of governing children. Naturally, this conception does not satisfy the epistemological requirements, since pedagogy is not a system of government, but rather a training system for human beings. (Herbert, 1933).

Lorenzo Luzuriaga was the one who made Herbart’s work known to the Hispanic world with his translation of General Pedagogy derived from the end of education. Research on this discipline began with the publication of his works, in which he maintains that “pedagogy is the science of education, an autonomous science, within the spiritual sciences, which has an artistic part, a technical part, a theoretical part and a philosophical part and that studies education from the descriptive point of view.” (Luzuriaga, L. 1958).

One of the main characteristics of a science is its dependence on the background and theoretical frameworks from which it derives its knowledge. There are no autonomous sciences, they all depend on each other. In addition, by characterizing Pedagogy as science, art, technology and philosophy, it assigns fields of knowledge
that do not correspond to it, with which it helps to deny its scientific nature by defining something as having more than two identities, with which I deny the identity of all discipline, because when something is defined as possessing several multiple essences or entities, nothing is said of what it intends to say.

In Luzuriaga's conception, the theoretical part is the one that corresponds to all scientific theory and this place would correspond to Educology. The artistic part refers to the unique performance of each didactic interaction, which is the work of the teacher in the classroom. The philosophical part does not correspond to it because this is the field of the Philosophy of Education. Only technology remains, which we recognize as corresponding to Pedagogy, as it is constituted by the prescriptions derived from scientific theories, in this case Psychology or Sociology, disciplines in which primary research is carried out and are of a translational, they transfer the knowledge they produce so that it can be applied, in Pedagogy, in the form of normative prescriptions, a recommendatory discipline that says how to act in didactic interaction, does not describe or explain the nature of education, because it does not correspond to it.

This prescriptive character is what T. W. Moore highlights when he affirms that the function of Pedagogy “is prescriptive or recommendatory. The difference can be made simply by saying that while a scientific theory purports to tell us what happens, an educational theory, like theories of morality, medicine, or politics, purports to tell us what to do. (T.W. Moore, 1994).

Emphasizing the prescriptive nature of Pedagogy, Moore says that it is a practical task that remains to be investigated more rigorously “but essentially it involves doing something, changing the attitudes and behavior of people, usually children.” (T.W. Moore, 1994).

This is how Moore argues that Pedagogy is a practical theory. A contradiction due to the classic opposition between theory and practice, but he justifies his point of view by arguing that “in the same way that there are various kinds of activities called games, there are also various kinds of theories. One class is that of scientific, descriptive, and explanatory theories, another that of practical theories whose purpose is not explanation, but prescription. (T.W. Moore, 1994). The latter makes it clear that prescriptive technologies are practical theories, different from scientific theories that describe, explain, regress, and even try to predict causal relationships.

RESULTS
All technology applies, when relevant and necessary, the scientific theories from which it is derived. This is the case of Pedagogy, which recommends how the educational process should be conducted, understood as a teaching process or as a learning process.

However, the terminological and conceptual proliferation that we have identified highlights the epistemological weakness of Pedagogy, a discipline that curiously receives the most diverse and bold epithets, such as Pedagogy of tenderness, Pedagogy of indignation, Pedagogy of the oppressed, Black Pedagogy. and many others. (Cusianovich, A. 2007); (Freire, Paulo, 2012); Lorena Alcázar, 2017). This is contrary to what does not happen with the hard sciences, since it is not possible to speak of a Chemistry of hope, a biology of affectivity, much less a Physics of revenge.

Fields of Pedagogy
In the pedagogical discipline, understood as a normative prescription, fields identified by the age of the students to whom it refers are identified. Thus, it is legitimate to speak of a child Pedagogy, of a Pedagogy of adolescence, of a Pedagogy for adults that many specialists call Andragogy.

Another criterion is to identify branches of Pedagogy based on the science for whose teaching or learning they are formulated. This is the case of the Pedagogy of the natural sciences or the Pedagogy of the social sciences.

Terminological and conceptual proliferation
If Pedagogy possessed solid epistemological bases, the terminological and conceptual proliferation that we have found would be diluted and give way to a univocal language, whose meanings were not polysemic and reference could be made to objective phenomena only by referring to epistemologically valid concepts or constructs. In this way, one would speak with property and precision and the pedagogical discourse would be irrefutable, due to its arguments based on reason or evidence.

However, in the field of Pedagogy, terms and concepts proliferate that hinder communication between those who cultivate it, revealing its epistemological weakness.

Respect for the theoretical paradigm: there is intense controversy regarding whether education should be conducted by objectives, by competencies, by capacities, by modules, by subjects, by projects, by results, by content, by experiences, or other similar denominations. This controversy, still unresolved, is the breeding ground for the terminological and conceptual proliferation that concerns us.

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Regarding the discipline: in the pedagogical discipline it is common to use interchangeably terms such as Education, Pedagogy, Andragogy, Educoloig, Didactics, Methodology, Educational Technology, Educational Sciences, Educational Theory, Neuroeducation, to the point that it is not possible to identify, precisely, the name of the discipline that is cultivated.

Regarding the educational process: there is no certainty as to whether the educational process is the integration between teaching and learning, or whether it involves two different processes, the one that the teacher fulfills with teaching and the one that the student develops with learning. Since Ausubel coined the meaningful learning construct, it was generalized very quickly to the point that it was believed that all learning should be significant. (Ausubel, Novack & Hanesian, 1972). Later, people began to talk about self-learning, autonomous learning, metacognition, or meta-learning.

Regarding the pedagogical approaches: in the hard sciences, there is what Kühn calls scientific revolutions that consist of the appearance of new paradigms that support the new theories. (Kühn, T. 1997). In this case, the emerging paradigm replaces the current paradigm, and it is not possible for the outdated paradigm to be revitalized over repeatedly appear renewed. In this case, a new geocentrism is not possible. On the other hand, in the social sciences the opposite occurs. Paradigms concur in time, and, in some cases, the overcome paradigms reappear after a while calling themselves new, such as neo-psychoanalysis, neo-behaviorism, neoliberalism or 20th-century Marxism. In this case, scientific revolutions do not take place and only the paradigms that were believed to be outdated are renewed. In this regard, the article published by Clifton Chadwick, a fierce defender of behaviorist pedagogy, who, after 30 years of silence, published an article entitled: Why I am not a constructivist, which sponsors neo-behaviorism, is very illustrative. (Chadwick, C. 2008).

There are some authors who maintain that constructivism is a kind of neo psychoanalysis, with deep idealistic roots that go back to Plato, since it is about introspections or looking inward. Thus, in Pedagogy, there is talk of neo-psychoanalysis, neo-behaviorism, neo-constructivism and the latest socio-formative trends, that of action research, or reflection on practice, have a high dose of psychoanalysis and idealism.

Regarding the curriculum: at this point, the terminological profusion is also notable. I know the term curriculum, for the singular and curriculum for the plural, both Spanishized in esdrújula and with tilde. But other specialists prefer the curricular barbarism, and complicate it by saying the curriculum, or the curricula. The latest in curricular fashion is the phrase curricular mesh and curricular map to allude to the structure that all curricula adopt. The specialists do not use the term curriculum, but rather the curricular mesh, curricular map, or simply mesh. Thus, when a curricular reengineering is done, they say that they have made a new mesh and the students say that the mesh has been changed. Study plan, curricular plan, curricular program, among others, are also used to allude, with a lack of precision, to the curriculum.

Other terms that are used in the curricular are pertinent curriculum, contextualized curriculum, hidden curriculum, explicit curriculum, co-curricular subjects, diversified curriculum, comprehensive curriculum, competency-based curriculum and, lately, it is about internationalizing the curriculum, in a teleological orientation contrary to the nationalization of the educational processes that were emphasized in the 20th century.

An issue related to this point is the name of entry profile, to refer to the requirements to start a new stage of studies, pre-professional practices, instead of professional practices, to emphasize the situation of the student and not the activities carried out , the redundant prerequisites, to refer to the requirements, the Latinisms sylab o, syllabus, silabi, to refer to the syllable, already Spanish as the case of the curriculum.

Regarding the curricular units: the curriculum is a structured set of elements. The minimum elements or components of such a structure are the curricular units. This is the denomination that we assign to courses, subjects, disciplines, themes, contents, topics, competencies, of which the curriculum is made up.

Regarding the institution: the institution in which the educational process is conducted is not exempt from innovative denominations. Thus, it is said that it is not obsolete to speak of college or school, but of an educational institution. Synonymous terms are school center, conservatory or institute, educational center, classroom.

Regarding the didactic method: at this point, there is no conceptual precision either. We talk about methods, didactics, methodologies, educational technologies, didactic strategies, techniques, procedures, modes, didactic organization, didactic scenarios, modes, didactic interaction, service learning, pedagogical intervention, among many other conceptual proposals so that it is not alluded to with precision to the method that educators allude to.
Regarding planning: the educational process is planned and there are rules that guide and regulate said activity. But the terms that proliferate in this aspect are learning unit, didactic unit, experience unit, thematic unit, programmatic unit. There are authors who speak of modules, to refer to a unit of time in which the competences that the teacher has proposed to achieve will be formed.

Regarding teaching: there is no univocal terminology with respect to teaching either. There is talk of individualized teaching, micro-teaching, teaching in small groups, socialization of learning, inclusive education, exclusive education that is provided in high-performance schools. It is also said that education must be intercultural, reference is made to compensatory education, remedial education, special education, remote education, virtual education, distance education.

Regarding the teacher: in this case, terms such as teacher, teacher, facilitator, intermediary, educational communicator, mentor, graduate in education, and many others are used that make it impossible to identify the name of the profession. Because education is a social task, all human beings do teach in some way, that is, they teach. A mother teaches with her son, the older ones teach with the younger ones, so that the term teacher has quickly generalized to the point that every professional who conducts a course is called a teacher, even though pedagogy is not their career. These are doctors, architects or lawyers who teach. Lately, the collective noun teachers are becoming more general, to refer to the group of teachers.

Teaching is a specific activity that is conducted at certain times, it is not permanent. On the other hand, the profession is the one we have acquired and, even if we do not practice it, we are still doctors, lawyers, or engineers. It is unjustified that the teacher or graduate in education, the exact name of their profession, is referred to with the term teacher that refers only to a precise activity that is usually conducted occasionally. The teacher is not always a teacher, he is also an advisor, consultant, researcher, tutor, and many other activities that go beyond the limited semantic field of the term teacher.

Regarding the teacher’s work: when it comes to referring to the teacher’s work, professional practice, exercise, professional, pedagogical practice, teaching performance, professional performance, classroom work is often used. But many professors and academic authorities prefer the phrase teach classes. In this sense, it can be said that someone is going to give a seminar or give a workshop. Seminars or workshops are learning events where it is impossible to teach classes. The nature of these academic events is also confused when saying seminar-workshop or course-workshop.

Regarding the student: for some authors, the students are students, from the Latin ad luminem. This is the origin of the connotation of the teacher as a beacon that illuminates the darkness in which the student lives. Other denominations are students, learners, as opposed to teacher, the one who teaches, apprentices, practitioners, associates, disciples, pupils, mentees, among other denominations, and the student or student body.

Regarding the academic calendar: the evaluative school period is organized into academic semesters, a euphemism to reduce time, since a semester is chronological and cannot have another essence. However, in pedagogy it is common to speak of academic semesters, or periods of 17 weeks. Lately, due to the pandemic, the academic semester has been reduced to 16 weeks, or four months, which is a semester. In some countries, the duration is five months, hence the name of quimestre.

Regarding the duration of a class: it is a very widespread practice in Peru to measure the duration of classes inaccurately, justifying that the fewer minutes the hour has, the pedagogical value increases. There is talk of teaching hours of 20 minutes, 35 minutes, 40 minutes, 50 minutes. In this case it is assumed that the fewer minutes the hour has, the more pedagogical it will be. It would be anti-pedagogical, otherwise. But if it is said that this is anti-pedagogical, we ask ourselves, what is pedagogical? In other countries, a school and evaluation period of five months is a semester. It is not possible, for example, to schedule two semesters a year and two months of vacation, with which the year would end up having 14 months.

DISCUSSION
Configuration of a science
It is exceedingly difficult to establish the criteria that make up a science. But if it is about the production of scientific knowledge, scientific knowledge has been elaborated or produced with the application of the scientific method. In this case, the hypotheses that are raised in the investigations must pass the falsehood test or be falsified, in Popper’s terms. (Popper, K. 2017). Hypotheses that pass the falsity test become scientific theories, but not as proven truths, but as valid theories. Thus, the body of knowledge of a discipline is not

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static, but provisional, to the extent that they are hypotheses that once passed the test of falsehood.

Bunge is more precise and indicates that man in his desire to understand nature builds an artificial world, called science, which characterizes it as rational, systematic, exact, verifiable and, therefore, fallible knowledge, as well as being dynamic and growing. (Bunge, M. 2004). Kolomoisky, maintains that science is a body of knowledge that is produced in a cyclical and incremental way, which alludes to the fact that all research replicates the previous ones, but in each successful replication, it is possible to increase the knowledge that is already available in the time of verification. (Kolomoisky, G, 1997).

Other specialists maintain that, like the social sciences, and among them is Pedagogy, they do not share the characteristics of the hard sciences. If this hypothesis is accepted, we would be facing a new demarcation criterion and only the hard sciences would be really sciences, while the social ones, in which Pedagogy is located, because they do not have the characteristics of those, would not achieve the epistemological status of such a science. time, they would be facing the configuration or conception of a new type of science, opposed to what we know and whose method to produce knowledge would be hermeneutic.

Bertrand Russell is precise in this situation because he says that “In order to establish a scientific law there are three main stages: the first consists in observing the significant facts; the second, in establishing hypotheses that, if they are true, explain those facts; third, in deducing from these hypotheses consequences that can be tested by observation. If the consequences are verified, the hypothesis is provisionally accepted as true, although it will ordinarily require further modification because of the discovery of further facts.” (Russell, B. 1988).

Abundant with arguments, Russell argues that neither facts nor hypotheses are isolated, but rather coexist in a body of scientific knowledge and that when a fact is said to be significant, it is in reference to said knowledge, so when it is said That a fact is significant in science is because it helps to establish or refute some general law. Science, although part of the observation of the, is not linked to the, but to the general, so that a fact in science is not a mere isolated fact, but a case, within a set of other cases. This is the difference between the scientist and the artist who, when observing the facts, pays attention to all their details. Science consists of a series of propositions arranged in hierarchical order, in which those at the lowest level in the hierarchy correspond to particular facts, and those at the highest level in the hierarchy, to general laws. (Russell, B. 1978).

That is why it is striking that Abreu-Valdivia, et. al., in the article called: Pedagogy as a science: its object of study, categories, laws and principles, only declare, without further argument, its scientific nature, and do not report any pedagogical category, much less the laws and principles that typical of Pedagogy. (Abreu-Valdivia, et. al. 2021).

But if it is assumed that Pedagogy is a science, it would be necessary to recognize, although not all, some of the characteristics of the sciences, because if it has the same essence as those, something of that essence must have, with which one would conclude, in Bunge's terms, a protoscience. (Bunge, 2004).

Those who deny the technological nature of pedagogy may do so because of some conceptual imprecision. Artifacts such as computers, mobile phones, automobiles, or airplanes are believed to be technologies. But it is worth noting that such artifacts are the product of technology, with which we specify the concept of technology as a set of prescriptions that indicate how things should be done. Understanding technology in this last sense, it is possible that many defenders of the scientific nature of Pedagogy would accept its prescriptive and, therefore, technological nature.

This is not the case of the prescriptions generated by Pedagogy since they do not describe or explain the educational phenomenon. The questions, what is Education? or what are its goals and objectives? are answered by the Philosophy of Education, what is learning? Or how do you learn? Psychology intends to answer, how to contextualize the educational process in society? Or what are the educational demands of society? Sociology tries to answer them. On the other hand, Pedagogy postulates an integrated process between teaching and learning, a PEA, a questionable hypothesis that does not pass the falsehood test, because while some authors maintain that it is a single integrated process, others maintain that the mental process that the teacher to teach, is different from the mental process that a student performs to learn. (Mejia-Mejia, E. et al. 2018). Or the formulation that the new education must be based on competencies and not objectives is, formally, an objective.

Other authors point out that Pedagogy is a science because it meets all the requirements to be recognized as such. Others say that it must be science because it has a defined field of study. All disciplines, scientific or not, have a field of study. Disciplines like Psychoanalysis, which epistemologically is not a science, has a body of knowledge, like Astrology or Hypnotism. Not because they have a delimited field of studies, the disciplines should be recognized as science.

But in the case of Pedagogy this requirement is complicated because it has various fields, the philosophical, scientific theory, technology, and art or is a practical theory. (Luzuriaga, 1958; Moore, 1994).

The problem is complicated by the fact that interdisciplinary fields are changing. It is no longer possible to
identify the fields, much less delimit the interdisciplinary fields. The limits of scientific disciplines are blurring, to the point that it is no longer possible to speak of single-disciplinary disciplines, but of multidisciplinary. This is in the sense that multiple disciplines or bodies of knowledge are shaping new sciences. But it also happens that this overlapping of disciplines produces mutations within the disciplines and thus transdisciplinarity is produced.

But most likely, interdisciplinarity occurs in this dynamic scenario, in the sense that research in a certain field of knowledge requires the concurrence and concomitance of various scientific disciplines that no longer maintain their nineteenth-century identity, but instead the postmodern scenario is configured by other sciences, such as nanotechnology, molecular biology, nuclear medicine, among many others. (Piaget, J. 1979).

Interdisciplinarity manifests itself when in a multidisciplinary team someone asks another professional about how their theories work. This question does not mean that the person asking the question does not have the answer, but rather needs the contribution of another scientist to solve his research problems. This is how the research is an interdisciplinary teamwork, in terms that their theories have been integrated to configure an attempt to integrate in the holistic paradigm, contrary to the atomistic paradigm, which consisted of establishing in disciplinary limits.

But interdisciplinarity has reached extremes to the point that there is talk of a cross-disciplinarity, to refer to the fact that the disciplinary fields and the knowledge that are produced and the research are not conducted in a single field, but that there is a crossover of fields. This makes it difficult to distinguish disciplines, but a whole and perhaps a single science, as it is possible to conceive from the holistic paradigm.

The epistemological support that is claimed is raised in terms of whether the hypotheses postulated by a science are not opinions, but unshakable formulations, that is, if it has a rational foundation. So, the hypothesis that Pedagogy is an art, has no rational basis, and is just an opinion. Therefore, it does not provide any epistemological foundation.

Education, Pedagogy, Andragogy, Educology

When talking about pedagogy, the word education is immediately associated. In this sense, both words are inseparable, but not interchangeable. At this point, there is a consensus in the bibliography that education is a task of society, a responsibility of all societies and that they must develop educational activities to perpetuate or remain in force. So, it is not possible to assume that Pedagogy is a science. And if it were, the term would be Educology, a term coined to refer to a logos product of education. Other authors maintain that this science of education is the Theory of Education.

From here arises the word Pedagogy that aims to establish itself as the science of education, but according to what has been said so far, it is impossible to recognize its theoretical nature, that is, descriptive, explanatory, and predictive, with which it could be accepted as a science. By recognizing its prescriptive and normative nature, pedagogy is being recognized as a technology that guides the conduct of formal educational processes. There would be no pedagogy to guide non-formal educational processes.

But some authors, alluding to the etymological meaning of paidos, maintain that when this task is conducted with adults, it is no longer pertinent to apply paidos, but rather andros, to men. This is how arguments arise in favor of an Andragogy that claims epistemological status. But there is a serious contradiction. The agein of andragogy is the same root that alludes to the idea of driving that appears in Pedagogy. The contradiction lies in the fact that the andrologies’ challenge the term pedagogy, arguing that the child is led, due to agein. On the other hand, the adult, as a developed and autonomous being, is not likely to be led by anyone, because he is autonomous in his performance. But then, Andragogy, with the agein thing, is adult driving.

Differentiated pedagogies

There are multiple types of pedagogies. We will analyze in what follows, those that overcome the epistemological barrier, and these would be the following.

- **Children pedagogy:** it is the one that is applied to the pedagogical task with children and would include the range of ages referred to in initial education in Peru, that is, from zero to 5 years.

- **Pedagogy of primary education:** they are the prescriptions that are formulated to guide the pedagogical task in the age range prescribed by the Ministry of Education in Peru for Primary Education.

- **Pedagogy of youth or adolescent age:** it corresponds to the pedagogical task that is fulfilled in secondary education. According to Peruvian Law, between 11 and 16 years of age. Here are two issues to resolve. In the first place, regarding age, it would be that of the adolescent. But these adolescents are in secondary education.
and here lies another differentiation. The subjects they study do not have the same treatment. Then there would be differentiation by subjects. That is, pedagogy of mathematics, history, language, etc.

**Adult pedagogy:** this pedagogy includes the education that is fulfilled in the third and fourth educational level. In the third educational level it is about initial professional training, university, or non-university. This pedagogy has its characteristics.

**University pedagogy:** but when it comes to the fourth educational level, that is, postgraduate, you already must collaborate with professionals who have specific motivations. And it is not the same to work on a diploma, second specialty, master’s degree, or doctorate.

Comparative pedagogy: this distinction is pertinent due to the phenomenon of globalization that allows the intensification of the academic mobility of students in the world. So, comparing the pedagogical systems of different countries contributes to deepen the knowledge of specific pedagogical problems.

**Modeling pedagogy:** many teachers teach from the models they provide to their students. For example, some Physical Education teachers, to teach swimming, must necessarily go swimming in the pool with their students or perform warm-up or gymnastic tasks in front of their students so that they repeat the movement in the way the teacher does. The repeat whit me is also famous, which English teachers request for their students to repeat, in chorus, what the teacher is saying, which is justified by the pronunciation that the students must learn.

Word pedagogy: contrary to this type of pedagogy, some teachers maintain that the word is an immensely powerful impulse that makes it unnecessary to model behaviors or expressions, but with only verbal stimulation produce student responses.

**Cybernetic pedagogy:** with the invasion of information and communication technologies in educational work, it has become clear that computer tools, virtual environments, artificial intelligence, and other alternatives are effective complements to face-to-face education. For example, providing learning materials or evaluating the tasks that students complete through the classroom is a real possibility that should be taken advantage of. (Gurung Binod, 2015).

At this point is located the connectivism theory postulated by George Siemens who maintains that learning occurs because of the connections that the student establishes with electronic devices. (Siemens, G. 2007). In any case, students have real opportunities to learn with the use of social networks or the educational platforms of Moodle, Google, Microsoft Teams, etc. that effectively complement face-to-face education.

**Multi-sensory pedagogy:** since learning is synaptic, the verbal stimulus can and should be reinforced by other stimuli to various senses of the learners. Thus, movement and colors stimulate the eye; music and sounds stimulate the ear; manipulation of objects in the learning process stimulate touch, and in some cases, smell should be stimulated, when necessary, as in learning gastronomy.

**Alternative pedagogy:** it is the one that applies to adults who, for assorted reasons, did not attend basic education when they were old enough to do so. This work with adults is not the same as what is done in the third and fourth levels. Historically, the Andragogy emerged as an alternative pedagogy for adult literacy. Due to the need to meet specific educational needs, it can be said that alternative pedagogy must be applied in the first and second educational level, that is, in primary and secondary education.

Lately, some universities offer free admission, or alternative admission, to people over 40 years of age to study at the third level. This is also an alternative Pedagogy. But the pedagogy of the fourth level cannot be an alternative, in any way, since the fourth level is characterized by its continuing education.

**Virtual pedagogy:** the pandemic declared in March 2019 forced the educational service at all levels to be offered virtually. This is not so much an alternative Pedagogy, but a remedial one, because it is used to address or fill the gaps in the face of the impossibility of doing face-to-face Pedagogy.

**General pedagogy:** it is the presentation of the basic constitutive elements of pedagogy.

**Remedial pedagogy:** when for varied reasons it is not possible to develop a pedagogy in normal face-to-face education conditions, one can speak of a remedial pedagogy as a possibility that allows solving a specific problem, in this case, the pandemic.
Pedagogies derived from pedagogical thought.

The revision of the pedagogical thought of the last centuries, allows, on the one hand, to highlight the epistemological weakness of pedagogy, to state that the central concern of the weighers is the prescription before the explanation and, rather than the differences of arguments between This type of argument highlights the absence of univocity in the supposed science of pedagogy and makes it similar to philosophy, a discipline in which it is possible to affirm the existence of as many philosophies as there are philosophers.

In the history of pedagogy, the curious situation of the concern of thinkers for the problem of pedagogy is observed. They have shaped their ideas with the imprint of the philosophical orientation they professed. This situation has also generated certain types of pedagogies, but we did not consider them in the previous section, since it deals with the analysis of pedagogical thought.

**Directive pedagogy:** Juan Jacobo Rousseau, in Emilio o de la education, novel pedagogical, postulates a philosophically naturalistic pedagogy, as when he maintains that man is good if society does not corrupt him. However, the pedagogical process that Rousseau inaugurated is the so-called traditional, classical, or directive pedagogy, in which the medieval and scholastic prescription is renewed: magister dixit, to decide that, if the teacher said it, that must be true and therefore indisputable. (Rousseau, 1762).

**Social pedagogy:** Juan Enrique Pestalozzi with his tenacious pedagogical apostolate, inaugurates a type of pedagogy, the social pedagogy that emphasizes the attention of the student whatever his intellectual or socio-economic condition. (Pestalozzi, J.E. 1801.

**Non-directive pedagogy:** in response to the directivity imposed by Rousseau, Alexander Neill establishes in Summer Hill, his property on the outskirts of London, a pedagogical experience based on freedom. There are no imposed regulations, but self-generated by the students in consensus. It would be what teachers now establish the rules of coexistence before starting the conduction of the curricular units that have been assigned to them. (Neill, A.S. 1966). In Peru, non-directive pedagogy has had an impact on the privately run Los Reyes Rojos school.

**Anarchist pedagogy:** better known as the New School or active school. Francisco Ferrer Guardia, a Catalan politician set out to renew pedagogy, founding a whole movement that has been very valid and is the new school or the new education that has emerged as the response to Rousseau's directiveness, but with the difference from the traditional one. It does not differ from the traditional one, since it is about teaching, only that in the new school learning is active.

**Critical pedagogy:** as a rebellious response to the capitalist system, Antonio Gramsci postulates a kind of social pedagogy but emphasizing criticism of the capitalist system, the origin of all evil according to his ideologues. The followers of this social pedagogy are Marx and in Peru José Carlos Mariátegui.

In the scheme of critical pedagogy, we can locate the Pedagogy of Liberation of the nineties by Paulo Freire, who evolved his thinking at the beginning of this century and proposed a Pedagogy of indignation.

José Martí, in Cuba, proposed repairing love when it comes to educating. Martí's thought has had an impact on Paulo Freire and Alejandro Cusianovich, who postulates a Pedagogy of tenderness.

**Pedagogy of experience:** John Dewey. This proposal led to improve American education to the point of elevating this society as the first in the world. Experience-based pedagogy. This type of model was proposed by John Dewey (1975) when he recommended that learning by doing should be done. This pedagogy focuses its prescriptions on the activity of the student who must experience the phenomena that he studies to better understand it and reach metacognition. From this point of view, the didactic methods of discovery learning, problem-based learning, project-based learning can be derived. This pedagogy in the United States produced a reform of such depth that it allowed the post-war generations to win the space race.

**Conceptual pedagogy:** the brothers Alejandro and Julián de Zubiría who run the Alberto Merani Institute in Colombia, promote a conceptual pedagogy based on the information that the student has about what he must learn. Rafael Flores Ochoa, a Colombian, has also theorized this topic in his book, highlighting the benefits of conceptual pedagogy.

**Creative pedagogy:** since Gilford published his famous article Creativity, he began a movement in favor of creative pedagogy, to promote innovation and research, taking advantage of the natural availability of human beings to create. (Gilford, J.P. 1950). In Peru, Manuel Pantigoso published a book called creative didactics, which abounds in arguments in favor of this type of pedagogy.

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Pedagogy of interest: it is very natural for students to learn when they really have an interest in learning. This happened to Einstein who, in secondary school, did not find anything interesting because it was only about attending punctually, having a military organization, and receiving the transmission of knowledge from his teachers. If it is about adolescents, the matter is more important, because a student who is in the classroom and if he does not know or is not aware of why he is there, will not learn anything or see nothing interesting in the educational process that the educator is involved in, without perceiving the interests of the learner. Rosa María Hernández López has theorized about the pedagogy of interest and this pedagogy may solve the learning problem of adolescents who, due to their very condition, adopt an attitude of rebellion against the older generation. When it comes to virtual education, the pedagogy of interest becomes more evident, because if the student is not interested in virtual classes, he, installed at home or in his bedroom, only enters the meeting, presents his forum, and performs other activities that he considers more interesting Professor’s presentations.

Leisure pedagogy: the leisure institute of the Deusto University of Navarra, Spain, for its very purpose promotes leisure pedagogy, as an alternative to take advantage of all the activities of daily life and find utility even in moments of leisure, its director, Manuel Cuenca Cabeza can be considered the benchmark for this type of pedagogy.

Delusional Pedagogies: with this denomination we refer to the proliferation of epithets that is usually applied to Pedagogy in recent years. These are authors who speak of a black Pedagogy, a Pedagogy of uncertainty, a Pedagogy of tenderness, a Pedagogy of indignation, and many others that worry us about the ability of Pedagogy to receive all kinds of adjectives, whose justification we do not find. When it comes to science, one cannot speak of a Psychology of hope, nor a Sociology of progress, nor a compulsive Biology.

CONCLUSIONS
1. A system of knowledge or a discipline assumes the character of science when such knowledge has been produced by the scientific method. That is, they have passed the test of the demarcation between what is science and what is not science. This rigid demarcation criterion, that of Popper’s falsification, is usually made more flexible by the confirmation or verification criteria.
2. Pedagogy is a discipline, or a knowledge system, but it has no pretensions to describe, explain, much less predict the educational phenomenon or the facts of education. Therefore, pedagogy is not a science.
3. Due to all the evident characteristics of pedagogy and after the analysis of its main hypotheses, it is concluded that pedagogy is a normative task, a set of prescriptions that seek to say how educational processes should be conducted.
4. In this context, pedagogy is a technology, whose main hypotheses are derived from the scientific theory generated by translational sciences such as Psychology, Sociology, Economics, Anthropology or Biology that generate theoretical knowledge according to which pedagogy recommends guide the teaching and learning processes.

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