

Ciência, Tecnologia e Inovação: Experiências, Desafios e Perspectivas 2



Samuel Miranda Mattos
(Organizador)

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Ano 2020

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APRESENTAÇÃO

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O Livro Ciência, Tecnologia e Inovação: Experiências, Desafios e Perspectivas, possibilita ampliação no conhecimento dos leitores, pois apresenta diversas áreas reunidas em dois volumes, sendo resultado de pesquisas desenvolvidas no âmbito nacional por diferentes Instituições de Ensino e colaborações de pesquisadores. Sua contribuição é substancial para o desenvolvimento da ciência e tecnologia do nosso país, configurando um avanço das nossas pesquisas.

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Os leitores poderão apreciar uma pluralidade de áreas nas ciências brasileira, percebendo os desafios e perspectivas que percorremos quando produzimos ciência. Desejo a todos uma ótima leitura e convidamos a embarcar nessa nova experiência.

Samuel Miranda Mattos

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TECHNIQUE: CONTRIBUTIONS OF MARTIN HEIDEGGER

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ABSTRACT: We are bodily and mentally linked to technology, as a human perspective, of its nature. Our attachments are not defined in a model of opposition, but of adherence, that is, in constructions of thoughts and imaginary. Thus, this study aims to conduct a dialogue with the main ideas of Martin Heidegger, regarding the technique and, specifically, to understand the theoretical concepts of technique and technology according to some authors. This is a bibliographical review, which assumes the phenomenological method, understanding that phenomenology seeks to go to the same things, investigating how the phenomenon is revealed. The theoretical contribution includes, specifically, the studies of Martin Heidegger (2007, 1959). The choice for the theoretical

constructs of this philosopher is due to the reflections that include the theme of technique and the attitude of the reflective man in front of it. As part of the significant partial results of this investigation, it appears that, for Heidegger, technique cannot be conceived as a simple means, because it is also a form of discovery in the sense that it constitutes a means to achieve ends and a human activity. For the philosopher, technique is directly related to the history of being, however, only begins to problematize it by realizing its connection with the destiny of humanity in the modern age, and emphasizes that technique is a means to an end, which consists in a making of men. In this sense, the thinker understands the technique as synonymous with operational knowledge. And technology as being “the title we give to the entity when it is permeated not by technique but by its essence - and not any one, but the one in force in our time.” The benefits of this research are related, above all, to the field of knowledge that can support future studies that have as their object the construction of knowledge through technologies, specifically in the school context.

KEYWORDS: Martin Heidegger. Technology and Technique. Knowledge Construction.

RESUMO: Estamos corporal e mentalmente vinculados à tecnologia, como uma perspectiva do humano, de sua natureza. Nossas vinculações não se definem em um modelo de oposição, mas de aderência, ou seja, em construções de pensamentos e imaginários. Assim, este estudo, tem como objetivo principal realizar um diálogo com as principais ideias de Martin Heidegger, no que se refere à técnica e como específicos, compreender os conceitos teóricos de técnica e tecnologia segundo alguns autores. Trata-se de uma revisão bibliográfica, na qual assume-se o método fenomenológico, entendendo que a fenomenologia busca ir às coisas-mesmas, investigando como o fenômeno se desvela. O aporte teórico abrange, especificamente, os estudos de Martin Heidegger (2007, 1959). A opção pelos construtos teóricos desse filósofo deve-se às reflexões que incluem a temática da técnica e a atitude do homem reflexivo diante dela. Como parte dos resultados parciais significativos dessa investigação, verifica-se que, para Heidegger, a técnica não pode ser concebida como um simples meio, porque ela é, também, uma forma de desencobrimento, no sentido em que constitui um meio para atingir fins e uma atividade humana. Para o filósofo, a técnica está relacionada diretamente com a história do ser, contudo, só começa a problematizá-la ao perceber sua conexão com o destino da humanidade na era moderna, e ressalta que técnica é um meio para fins, o que consiste em um fazer do homem. Nesse sentido, o pensador entende a técnica como sinônimo de conhecimento operacional. E tecnologia como sendo “o título que conferimos ao ente quando este é perpassado não pela técnica, mas sim por sua essência – e não qualquer uma, mas a que se encontra vigente em nosso tempo.” Os benefícios desta investigação estão relacionados, sobretudo, ao campo de conhecimentos que podem subsidiar futuros estudos que tenham como objeto a construção do conhecimento por meio das tecnologias, especificamente no contexto escolar.

PALAVRAS-CHAVE: Martin Heidegger. Tecnologia e Técnica. Construção do Conhecimento.

1 | INTRODUCTION

This work is part of the research line Educational Processes and its Fundamentals, of the Education Graduate Program of the University of Uberaba - UNIUBE, and seeks to integrate our thesis in construction, whose object of study - the construction of knowledge through the internet. It is an interdisciplinary scientific research on education and technology, in progress, with significant partial results.

We assume that techniques/technologies have changed the production process not only of goods, but also of services, a phenomenon that encompasses the

professionals who work in the educational process at different levels, from schools and educational institutions, as in the functions of teaching, research, management and extension, resulting from a significant presence of technology, especially the Internet, increasingly ubiquitous in the various contexts, especially educational. In this thinking, what worries us is not the fact that the world is becoming increasingly technical, but the fact that man is not prepared for this transformation of the world, in which technique/technology is established.

As pointed out by Heidegger (1959),

“[...] the revolution of technique that is taking place in the atomic age could arrest, bewitch, and dazzle man in such a way that one day the thought he calculates would be the only thought admitted and exercised” (HEIDEGGER, 1959, p. 26).

Thus, in a reflexive movement, we propose, through a literature review, to bring Heidegger’s reflection concerning the technique in this investigation. Since we opted for the phenomenological approach, we sought to understand the phenomenon in its essence. In the words of Bicudo (2011), the trajectory of the search for essence enables understandings, because, in the phenomenological view, every form of manifestation or objectivity refers to an intersubjective relationship, that is, “[...] subjectivity, intersubjectivity and objectivity are aspects of the same movement, which are not separate and hierarchical instances or spheres” (BICUDO, 2011, p. 34).

The choice of Martin Heidegger’s theoretical constructs is due to his reflections on the theme of technique and the attitude of the reflective man in front of it. The article is subdivided into four sections: after this introduction, in the first we present the concepts of technique and technology, in the conception of several authors; in the second, we bring biographical data, the relevant bibliographic production and the main points of Heidegger’s academic life; In the third, we point out some reflections on the technique from Heidegger’s perspective. Then, the final considerations are made.

2 | TECHNIQUE AND TECHNOLOGY: CONCEPTS

Initially, it is necessary to differentiate two terms that, although similar, refer to different situations: technique and technology.

According to the entries brought by Lalande (1999, p. 1109), the technique refers to the “[...] set of well-defined and transmissible procedures designed to produce certain results considered useful” for humanity. It would thus have a pragmatic objective of solving the problems that arose during man’s social development. According to this concept, this word refers to the methods organized in the construction of man’s scientific knowledge.

Technology, in turn, would be “[...] the theory, or philosophy, of techniques.”

Thus, technology is a more abstract and broader term than technique, because it involves the reflection of the human being about the techniques of their culture. Technology concerns the study of technical procedures, in addressing them both in general terms and in their correspondence with the progress of civilization. Also, technology, according to Lalande (1999, p. 1109-1111) can be understood as the “theory of a technique”. The definition points out that “[...] sometimes (for a common metonym in the use of terms in -logy’), the word is used in place of the technique or set of techniques” (LALANDE, 1999, p. 1111).

The concept of technique in Heidegger goes through the concept of technique neutrality as illusory, because the technique cannot be controlled by the human being. These meanings lead us to the idea that the instrumental determination of technique does not reveal its essence to us. The thinker presents an analogy that allows us to understand what he calls the essence of technique, in the example of trees, Heidegger (2007), points out that,

[...] What dominates every tree as a tree is not exactly a tree that can be seen among other trees. So the essence of technique is not something technical either, for we will never experience our relationship to its essence as long as we only represent and propagate what is technical. (HEIDEGGER, 2007, p. 375).

In this thinking, Heidegger (2007, p. 376) asserts that the conception of technique is a “means and a human doing as a means to the ends”, and man’s relationship with it is determined by the instrumental conception of technique. As highlighted by Silva (2007),

[...] In order to consider instrumental character, one must consider a way of inhabiting the world from which instrumentality derives. [...] the emphasis on human construction, needs to suppose the anteriority of man’s stay in the midst of things, so that he unveils them in the way of their profit and exploitation in scale. Thus, in this case, instrumentality derives from a certain mode of aletheia¹. (SILVA, 2007, p. 371).

As Possamai (2010, p. 22), Heidegger “understands the technique as synonymous with operational knowledge”. And technology as being “the title we give to the entity when it is permeated not by technique but by its essence - and not any one, but the one in force in our time”. For this author, “[...] technology carries with it a conviction of effectiveness, because it combines with the claim of certainty of science.” In that thinking,

[...] technology would be a form of revelation of existence, a principle of the construction of the world under certain conditions - it is the shaper of a time, expresses a way of being of the world because it is the correspondence between a process of positioning reality and a way of thinking. (POSSAMAI, 2010, p. 22).

1 Aletheia (in classic greek: ἀλήθεια; transl.: **Aletheia**, literally, true, in the sense of unveiling: of a-, negation; and lethe, “forgetfulness”), to the ancient Greeks, designated truth and reality simultaneously. In *Sein und Zeit*, Martin Heidegger took up the term to define the attempt to understand the truth.

For Feenberg (2003, p. 2), the word “‘techne’ is at the origin of the modern words ‘technique’ and ‘technology’ in Western languages”. And adds that

[...] Techne in ancient Greece means knowledge that is associated with a form of poiesis. For example, medicine is a techne whose goal is to cure the sick; Carpentry is the techne whose purpose is to build with wood. In the Greek view of things, each techne includes a purpose and meaning for the artifacts whose production it guides. (FEENBERG, 2003, p. 2).

In accordance with Feenberg’s (2003) thinking we understand that the Greeks had various kinds of techniques and crafts that were the equivalent in their day to the way technology is to us today. They did not have technology in the modern sense, but conceived nature according to the model of artifacts produced by the technical activity itself. Thus, the idea of artifact is not “arbitrary or subjective”, which, according to Feenberg, belongs to a techne that contains the essence of the thing to be done prior to the act of doing.

3 | BIOGRAPHICAL DATA, PRODUCTION AND ACADEMIC LIFE POINTS

Heidegger (1889-1976), one of the greatest thinkers of the twentieth century, and one of the most respected intellectuals among phenomenologists, according to Safranski (2000, 1994). He was born on September 26, 1889, in the city of Messkirch, in German Switzerland, and died on May 27, 1976, in Brussels, Germany. He studied Theology and Philosophy at the University of Freiburg, having been a philosopher, writer, university professor, dean and successor of Edmund Husserl in the Chair of Philosophy. He received his doctorate in 1914, the year he published

[...] “The Doctrine of Judgment in Psychologism - Critical-Positive Contribution to Logic”. Two years later, he published “The Doctrine of Categories” and the “Meaning in Duns Scot” of 1914. In 1923 Heidegger took on one of the Philosophy seats of the University of Marburg and began to project himself among the specialists, using personal interpretations of pre-Socratic thinkers such as Heraclitus of Ephesus (6th century BC) and Parmenides of Elea (6th century BC). In 1927, he published what would become his magnum opus, “Sein und Zeit”, or “Being and Time”. In 1928, he returned to the University of Freiburg to succeed Master Husserl. In 1929, he published “What is Metaphysics?”, “Kant and the Problem of Metaphysics” and “About the Essence of the Foundation”. Other works include: “Hölderlin and the Essence of Poetry” (1936), “About the Essence of Truth” (1943), “The Platonic Doctrine of Truth” (1947), “The Way of the Field” (1953), “Introduction to Metaphysics” (1953), “What Does It Mean To Think” (1954), “About the Experience of Thinking” (1954), “Courses and Conferences” (1954), “What Is This - Philosophy?”(1956), “On the Matter of Being” (1956), “Identity and Difference” (1957), “The Fundamental Principle” (1957), “Sendas Perdidas” (1957), “Serenity” (1959), “The Paths of Language” (1959), “Nietzsche” (1961), “The Matter of the Thing” (1962), “Kant’s Thesis on Being” (1962), “The Matter of Thinking” (1969) and “Heraclitus” (1970, with Eugen Fink). (HEIDEGGER, 1984, p. 5-6).

Critic of the technique, sought to understand, intensely, the consequences of

technological development for society. For the philosopher, technology can divert man from his own: thinking. Starting from the distinction between a calculating thought (directed to the technique) and a thought that meditates (which reflects on it), it seeks to denude it from its mystification, motivating the subject to reflect on the indispensability of rescuing the thinking that meditates.

From this standpoint, it is not only thought that calculates that governs man's being in the world. For the German philosopher, (1959, p. 5) “[...] today's man runs away from thinking”, but he understands that the thought that meditates and calculates are indispensable, because they constitute ways that provide opportunities for man realize your existence. Both types of thinking describe the very way in which man relates to the world around him. Among his most revisited works are “Being and Time” (1927) and “The Time of the World Image” (1938).

In “Being and Time”, Heidegger spells out his ideas about the existence of the being. This work is considered one of the significant vectors that influenced the philosophy of the twentieth century, because it ponders human existence through a questioning about the being. Part of a critique of the metaphysical orientation of Western thought, it questions the very way of existing and inhabiting the world for the primary purpose of understanding the meaning of human existence.

In “The Time of the World Image”, the philosopher departs from a usual sense of technique, received by many of his contemporaries, that technique is a means to man's achievements. The problematic about technique acquires density in the philosopher's thought since the 1950s, mainly through his writings “Serenity” and later, “The Matter of Technique”.

4 | REFLECTIONS ON THE TECHNIQUE FROM HEIDEGGER'S PERSPECTIVE

In writing *Serenity* resulting from a 1955 conference, Heidegger reflects on the essence of modern technique and the recovery of meditative thinking. The ceremony took place to honor the German composer Conradin Kreutzer, his countryman, and during the solemnity, the German philosopher discussed the technical character present today.

At the conference, Heidegger (1959, p. 2) highlights the importance of thinking and even states that, “in order to celebrate, we must think”. For the philosopher, the function of the “commemorative discourse” is to “help us expressly think about the honored composer and his work”. Thus, we understand that the issue is not to deny, but to rethink the junction of man with technique, since man, when appropriating technological objects, forgets himself and becomes “poor-in-thought”. In addition to losing its roots.

According to the philosopher, modern man claims that at no time have

researches, investigations and such advanced plans been carried out. These statements, in a way, are correct, considering the existence of both types of thinking and which are so important for man to realize his existence on earth, what he calculates and what he meditates.

The calculating thought neither meditates nor reasons what exists. Calculative thinking operates on the praxis plane and always aims to inspect processes that will lead to desired results. This form of thinking is dominant in the technical world and in all kinds of reality control and challenge to reality.

Meditating thinking sometimes requires a great deal of effort and lengthy training. It also requires “that we are not unilaterally bound to a representation, that we do not continue to run one way towards a representation. Meditating thought demands that we deal with what at first sight seems irreconcilable” (HEIDEGGER, 1959, p. 12).

Thus we understand that both types of thinking, which meditates and calculates, are necessary, for it is not only the calculating thought that governs man’s being in the world. The thought that meditates and the thought that calculates are necessary because they are ways that enable man to realize their existence. Thus, in the philosopher’s view, both types of thinking describe the very way in which man relates to the world around him.

Thus, in the context of the conference, *Serenity*, Heidegger reflects on the essence of modern technique. Not to deny the technique, but to rethink man’s association with it. Throughout the text, the philosopher warns that we keep thinking awake, because what is right for man is to be a thinking being. As Heidegger points out,

We let technical objects into our everyday world and at the same time let them out, that is, let them rest in themselves as things that are not something absolute, but which themselves depend on something superior. I would like to designate this simultaneous yes and no attitude about the technical world with an old word: serenity to things (*die Gelassenheit zu den Dingen*) (HEIDEGGER, 1959, p. 30).

In this thinking, Heidegger clearly defines Serenity as the attitude of yes and no simultaneous to the technical world - serenity to things. For him, we should be concerned not with mastering the technique, but with understanding that its essence leads us to our own way of existence and, therefore, we must build a freer connection with it, allowing ourselves other ways of being and dealing with the technique.

An idea brought by Heidegger relates to the question of the essence of technique in the field of discovery. In the text *The Question of Technique*, the essence of technique is understood as openness, for “truth is conceived as uncovering, not as adequacy, since truth is not adequacy of the thing to the intellect, or representation” (HEIDEGGER, 2007, p. 21).

In this line of thought, the philosopher, when questioning the technique about

its own essence, moves it to the ontological level. And to discover it, it is necessary to transcend its mere instrumental determination, that is, to discover the essence of technique, one must determine what the instrumental is. That is, we understand instrumentality as things as means to an end. In this view, we refer to the philosophical reflection of the Greeks, who perceived the instrumentality as characterizing the technique.

Another idea brought in Heidegger (2007) is the modern technique, considering that the problem is in the distinctive way of dealing with objectivity. For Heidegger, the structure and meaning of modern technique is lost by revoking its bad side over its good side, for at the same time technique can be a means to ends and a doing of man. They are correlated conceptions because they constitute a human doing.

In thinking about technology, Heidegger considers that technology operates a social and cultural control over man, which values the thought he calculates, the manager of technology, forgetting the thought that meditates. However, according to the philosopher, ontologically, the technique is part of the human, so there is no way to separate one from the other. This alleged separation would result in the split of the contemporary human into something that could not be recognized. Following, we present the final considerations.

5 | FINAL CONSIDERATIONS

We address in this paper a theory of the technique. We find that, for Heidegger, technique cannot be conceived as a simple medium, because it is also a form of discovery. In this sense, for Heidegger, the technique is directly related to the history of the being, however, only begins to problematize it by realizing its connection with the destiny of humanity in the modern age.

In thinking about technology, Heidegger considers that technology operates a social and cultural control over man, who values the thinking he calculates, the manager of technology, and oblivious to the thinking he meditates. In the text “Serenity”, Heidegger reflects on the essence of modern technique and stresses the primacy of regaining meditative thinking. He underscores the fact that we keep awakening reflection, to the extent that to be thinking is precisely what man has of his own.

In the same sense, according to Heideggerian thought, serenity involves the integration of the thought that calculates with the thought that meditates, that is, the thought that makes it possible to create the technique and use it, but also the thought that makes it possible to reflect on the technique. These two dimensions constitute what Heidegger calls serenity, in which yes and no are harmoniously present. Therefore, serenity is a concept of precisely the interaction between the thinking that

calculates and the thinking that meditates.

We, hope with this study, ton contribute to future work on the technical/ technology theme, in order to continue the work in question; Thus, the relevance of the research is materialized by reflecting on the technique in the ontological scope, since technology has a totally human dimension, being a product of human intelligence. Their apparatuses and devices are eminently human, the result of a synchronic and diachronic collaboration, in a human exercise that pervades time and sews contemporary culture in a complex fabric. In this sense, conceiving an opposition between human and technology becomes inconceivable or at least indefensible.

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