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The role of Higher Education in Environmental Protection in Mozambique: A Philosophical Reading in the Light of Hans Jonas' Thought

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Abstract

Based on the ethics of responsibility, developed by Hans Jonas (1903-1993), understood in light of the legislation of higher learning in Mozambique, as it is exemplified in the work edited by Premugy (2012) and Decreto 46/2018, one observes that the current higher education system in Mozambique is guided by utilitarian principles that do not promote a culture of natural and environmental integration and protection. For these reasons, the present research suggests the need of replacing this education system with another one that is based on Hans Jonas' ethics which aims to promote the creation of a pro-ambientalist society, based on the principle of responsibility for the wellbeing of society and of the future generations. For the reasons presented above, the present article concludes that there is need to look at nature in a perspective of care and preservation to the benefit not only of nature but also for the wellbeing of the present and future generations. For this purpose, the same research uses a qualitative-hermeneutical research method to analyse the literature already produced in this field, in light of the thought of Hans Jonas and come up with its expected results.

Keywords: higher education, environment, ethics of responsibility

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Introduction

In 1972, the Stockholm Conference decided that humanity should develop attitudes that would help to improve the relations that society had with the environment. This suggestion arose within the context of the need to create a balance between economic development and environmental degradation, seeking to reverse this situation for the good of the environment and humanity. It is no accident that, although not having participated in the referred Conference, the Mozambican government decided to adopt Law No. 20/97, of 1 October, commonly known as the Environment Law, to regulate the situation mentioned above. This decision, however, ignored the need to include the role that higher education can play in protecting the environment. For this reason, adopting the thinking of Hans Jonas, this article seeks to reflect on the role that the Mozambican university and university professor can and should play in the search for solutions that can help to address the above mentioned problem in the country. The question raised is: in the view of Hans Jonas, what is the role that higher education in Mozambique should or should play in protecting the environment?

We highlight here the pertinence of the present study because a university is not only a place of knowledge production; it must serve and contribute, with the same knowledge, towards solving problems that society faces. In the case of Mozambique, for example, besides the previous years, in which the country was plagued by floods and droughts, in 2019, it was also affected by cyclones Idai and Kenneth that destroyed many infrastructures and claimed human lives, leaving a trail of unprecedented destruction. Meanwhile, universities have done and are doing little to mitigate these types of situations.

In order to achieve the proposed objectives of this article, we begin with a brief reflection on the weaknesses of Mozambican higher education with regard to this matter. Then, we propose the philosophical thought of Hans Jonas as an alternative to the problem mentioned above, mainly for the situation of higher education in Mozambique. Finally, the article proposes the need to adopt pro-environmentalist approaches in higher education, looking particularly at what should be the role of the university professor in the country. We begin our reflection by first identifying the problem of Mozambican higher education in relation to the environment.

Education, higher education and the environment

In view of the challenges imposed by both the post-colonial period and the period after the civil war, in Mozambique, education and teaching were hostage to policies that aimed to promote the socioeconomic reconstruction of the country, ignoring the need for them, also, to be oriented towards the responsibility for the protection of nature and the environment. Examples of this type of situation are found in the fact that guiding documents and education policies at different levels of education and, even in higher education in the country, are not concerned with orienting the same education towards the protection of nature and the environment. Such documents are found in the Collection of Higher Education Legislation (2012), Decree 46/2018, which regulates the licensing and operation of higher education institutions, among others, existing in the country.

It is no accident that, in the various government interventions, for example, the various Mozambican presidents, such as Joaquim Chissano, Armando Guebuza and Filipe Nyusi have stressed that Mozambique had, and still has, the need for natural resources in Mozambique, that primarily benefit Mozambicans and not foreign companies and institutions (Muthembu, 2014; Mimbiri, 2016). Pohlmann and Slaven (2010) share the same opinion because they believe that natural resources existing in the country are a great source of wealth, but there is a need for them to benefit, in the first place, the most vulnerable and most underprivileged social strata in the country. These authors look at the diversity of natural and mineral resources that exist in the country as opportunities that can help boost their socio-economic development, if they are properly exploited and used (Pohlmann & Slaven, 2010). Strictly speaking, this is a good approach for the pursuit of inclusive development, especially if these resources are exploited and put to the benefit of the most vulnerable strata of Mozambican society.

This type of concept about natural resources, led Mozambican education and higher education to look at the exploration of nature from the point of view of it serving human sustenance and survival (Mimbiri, 2016). This vision was developed based on the perception that human beings have always manipulated natural resources in order to produce the necessary resources for their livelihood, meeting the diverse human needs on the planet (Mimbiri, 2016). In this sense, in spite of the deterioration, weakening and depletion of natural resources, the pressure placed by the growing industrialization and urbanization and the desire to exploit these resources ended up being seen as necessary for the purposes mentioned above (Mimbiri, 2016).

From a religious point of view, having the creation myth as a reference point, the exploitation of natural resources is considered to be permissible for humanity, in the improvement of human life conditions on the planet. It is not by chance that in the book of Genesis, Adam is guided by God to dominate the land and everything in it, using the plants, trees, fruits and animals that exist in it to support himself (Genesis 1, 28-30). Thus, it is clear from this approach that nature exists for this purpose. This means that, according to this tradition, nature has no other value in itself, but for the benefit and sustenance of humanity (Thiroux, 2009).

From this approach, it appears that to satisfy the growing need for natural resources that aim to feed industry, commerce and other human needs, these resources are and have always been exploited at alarming levels, risking even their depletion in the short and/or long term (Thiroux, 2009). This exploitation model was due to the adoption of a scientific and educational approach in which the emergence of an exploitative attitude towards nature made possible the development of science and other scientific advances that improved the conditions of human life on the planet (Thiroux, 2009). As science and technology progressed, nature became more and more compatible with human needs and desires, making the environment and its resources exploitable without taking into account any intrinsic value that it might have (Thiroux, 2009). From this approach, human beings are the only ones to be attributed intrinsic value, while nature is seen as having only an instrumental value. The instrumental value attributed to nature is to assist humanity to achieve any goals necessary for its survival on the planet (Thiroux, 2009). Thus, this would be one of the elements that would better justify the categorical Kantian imperative that demands that humanity be treated as an end in itself and everything that exists around it, including nature itself, as a means, to satisfy the needs of that end, that is, of the human being (Kant, 2012).

Hans Jonas' position on education and the environment

In the opinion of Hans Jonas (2006), this view is based, firstly, on the fact that the exploitation of nature is justified by ethical aspects that are purely and essentially anthropocentric. For Jonas (2006), these aspects found expression in the thought of Immanuel Kant, when, through the categorical imperative, he establishes that the best ethical principle to guide humanity is that which, through the autonomy of reason, moves the human person to act through "a maxim such that its action becomes a universal law" (Kant, 2012, p. 128). The problem with this maxim, for Jonas, is that Kantian ethics is "insufficient to sustain collective action in the circumstances of technological civilization (Alves & Pes, 2018, p. 191). Thus, Jonas (2006) understands that this ethical concept only concerns the direct relationship of man with the other man, including that of each man with himself, ignoring the need for ethics, too, with respect to the well-being of the environment, with the survival of future generations and species and with planetary sustainability. For Jonas (1994, p. 40), like the other ethics previously established, this does not take "into account the global condition of human life, the distant future, the human condition and the existence of the species". It is for this reason that he proposes another ethical approach capable of responding to the challenges presented by a society technologically oriented towards economic development.

This approach must be based on another perception of the categorical imperative that moves human beings to act "in such a way that the effects of their action are compatible with the permanence of an authentic human life on earth" (Jonas, 2006, p. 40). For Jonas (2006), reformulating ethical traditionalism and the Kantian categorical imperative, this approach should help to respond to the needs and concerns of both the human species and other non-human species. Rampazzo (2003, p. 72) also supports the position presented by Jonas when affirming that "ethics should not refer only to the human being. This should extend the look to […] each scientific intervention of Man, about life in general ". It is not by chance that Jonas (2013, p. 53) believes that "an impoverished extra-human life also means an impoverished human life" since we cannot think of human beings as separate from nature, but as an integral part and fruit of the same nature (Jonas 2013, p. 56). For this reason, there is a need to develop a non-exploitative mentality of nature, since the gradual destruction of it also represents the destruction of the quality of life and health of human beings.

From this perspective, Jonas (2006) maintains that the other pillar on which the ethical problems of modernity are based, especially with regard to environmental protection and education in the contemporary world, has to do with the excessive belief in human reason based on formal education, for the exploitation of the resources that the land has. Based on the philosophical thinking of Francis Bacon (1561-1626), René Descartes (1596-1650) and Immanuel Kant (1724-804) who support the over-estimation of human reason, which was one of the main drivers of the industrial revolution, Jonas notes that this belief is based on the principle that the well-being of humanity depends on the use of that (human) reason for the exploitation of the natural resources existing on earth. In this way, the use of reason for the exploration of nature associated with industrial production would contribute and, in fact, contributes to the improvement of human living conditions on earth.

However, based on the negative effects of this over-estimation of reason for industrial production, Jonas starts from the negative experience acquired from the dropping of atomic bombs on Hiroshima and Nagasaki, which occurred from 06 to 09 August 1945, in Japan ; of the problems caused by global warming due to the greenhouse effect; the effects of wars in which with the use of technology many people are killed due to the interests of some peoples and nations; unbalanced economic development where economic resources of the most impoverished countries are used for the benefit of wealthier countries, among other problems, to argue that this "power has become autonomous, while its promise has become a threat and its prospect of salvation has become an apocalypse" (Jonas 2006, pp. 236-237). Thus, because this approach has positioned man as if he were a being located outside of technology in order to be able to dominate it, Jonas (2015), quoted by Alencastro (2009, p. 65), notes that " man himself started to be among the objects of technology, making him become one of the biggest victims of his own inventions ". Consequently, concludes Jonas, the appearance of new technologies […] gave rise to the fear of the harmful consequences of the great technological powers ", when previously, all this was considered as an unquestionable advance (Alencastro, 2009, p. 65). It is for this reason that Jonas states that "*Homo faber* placed himself above *homo sapiens*, since," the triumph of *homo faber* over its external object meant, at the same time, his triumph in the internal constitution of *homo sapiens*, of which he used to be a servile part "(Fonseca, 2009, p. 152).

We now show the framework that the environmental issue has for education and teaching in higher education in Mozambique.

Environment and higher education in Mozambique

As part of a world that has been destroyed by the scientific achievements of humanity, Mozambique is not exempt from these consequences. While on the one hand the country has suffered from floods and cyclones, as mentioned above, on the other, it has suffered from droughts and other environmental problems caused by man, endangering human life and that of other species. These problems are partly the result of the concept of why nature was created, as explained above, and due to the type of education that was established for the country. This type of education, unfortunately, did not take into account the need for curricula to instill, in the citizens, an ethics of responsibility, for the good of nature and the environment.

Thus, an education that supports the development of an environmental ethics is fundamental for Mozambican society, as this is relevant and significant for the environment, as a common space to be shared by both humans and non-human beings in the universe. In this sense, this is where the role of the university professor and researcher becomes relevant, as they are the transmitters of scientific-ethical knowledge that can help to reverse the country's ethical-environmental situation. The role of the teacher, as stated by Pope Francis (2014, p. 13), has to be to make the new generations aware that "the human environment and the natural environment are degraded together; and, we cannot adequately face environmental degradation if we do not pay attention to the causes that have to do with human and social degradation ".

In this sense, Mozambican teachers and researchers have a responsibility to help society reorient its relationship with nature and the environment, to improve its understanding of the obligations it must have in relation to the preservation of nature for the benefit of present and future

generations (Pojman, 1997). It is in this context that the need arises to design, in Mozambique, a model of education, in higher education, based on the ethics of responsibility, making society aware of this concern.

According to Palmer (2002), Freire believes that through awareness, education should help citizens to detect the problems they face so that, after reflecting on them, they can be the protagonists of the solutions to the problems they face, through individual and collective reflection and action. This awareness must be accompanied, on the part of the teacher and researcher, with reflection on different types of solutions, which can help the same society to overcome these problems (Freire, 1973). Freire also believes that the same type of education must be accompanied by practical and collective action so that the subjects participating in it can be agents of the transformation that they and their communities wish to see in their respective societies. It is for these types of situations that Freire becomes relevant to support Jonas's thinking, because he realizes that “the resulting understanding [of this problematization] tends to become increasingly critical, therefore, increasingly disalienating” for those that take part in this type of education (Freire, 1973, p. 70). In this way, instead of nature being exploited without taking into account the consequences of this action, with the reorientation of the role of the university professor and researcher, education based on Freire's reflection and action will refer its participants to the planetary responsibility as defended by Jonas.

According to Fonseca (2009, p. 61), the responsibility promoted by Jonas "must be understood as fear, as it is an action that anticipates [human] action and that we can understand as prudence". It is not by chance that he believes that “it is Jonah's nature… to make it evident that he is not talking about a paralyzing fear of acting, of egoism” (Fonseca, 2009, 161). “What is at stake is a fear that implies the subject's lack of responsibility” (Fonseca, 2009, pp. 161-162). Thus, the fear presented by Jonas is the result of the utopian character of scientific progress, where, due to the fact that man does not have total knowledge and total control of the negative effects that this can cause both for humanity and for the environment, there arises the need for the Mozambican university professor to instill in his students and in society the pertinence of having more respect and more prudence for the preservation of this common good. This fear, therefore, proposed by Jonas, is a fear that mobilizes the individual, and not a fear that can be paralyzing.

In his article entitled ‘The Question Concerning Technology’ (1977), Martin Heidegger, Jonas's mentor, between 1921 and 1924, at the University of Freiburg-Germany, shares the same feeling because he believes that, in order for there to be a good relationship between being human and technology, especially in education, there is a need for human beings to question it, in order to prevent its negative effects. To support this argument, Heidegger compares the concept of technology, created in ancient Greece, with that of modern technology. From this comparison, he finds that while in the Greek concept, technology was understood to be the art of revealing the truth, the uncovering of Dasein, in the second, technology hides the truth so that humans are constantly in search of it (Heidegger, 1977) . Thus, Heidegger (1977) cautiously proposes the fact that, in most cases, technology provides false hope in improving the conditions of human life and other species. This is where education and teaching, especially in higher education, should play their role in protecting human beings from the risks of the same technology, when the consequences that this can bring to human beings are not taken into account.

In this sense, both Jonas' fear and Heidegger's prudence are revealing for the type of society that university professors should seek to design, both for the present and for future generations. This type of society necessarily involves the creation of a type of education and teaching that can help correct the mistakes made by modern man, in order to create better conditions for the survival of future planetary and human life, especially in Mozambique. This fear must be accompanied by the need for care due to the same nature, due to the consequences that these are capable of bringing, and have brought to society (Fonseca, 2009). As Alves and Pes (2018, p. 199) explain, "the Responsibility Principle, applied to education and teaching refers to the need to develop educational processes aimed at preserving the good, the being, the value, through which you can stop the human urge to overestimate human technique and instrumentality". It is from this perspective that, for Jonas, education and the teacher become relevant in guaranteeing and developing sustainable policies both for the good of human life and for planetary sustainability, since "an education focused on the ethics of responsibility sensitizes students to commit to the common good "(Alves & Pes, 2018).

Thus, for Mozambique, there is an urgent need to create a model of education and higher education that is instrumental in the development of a mentality of global responsibility, not only in the members of the university community, but also in the citizens. This type of education and teaching must be based on reflections and concrete actions, at present, so that they encompass and ensure the existence of a life, well-being and survival worthy for both the human species and non-human species in the future. In this way, it becomes pertinent to embrace the position presented by Jonas (2015), as he believes that "educational processes need to be worked on from the perspective of building knowledge that will provide an understanding of the world" (Alves & Pes, 2018). This understanding must be based on the principles of dialogue, the consideration of ethical principles and care for oneself, others and the world, which demands a collective praxis.

Concluding note: Ethics of Responsibility and the educational imperative in Mozambique

In view of the problems presented above, there is a need for higher education in Mozambique to abandon the utilitarian approach of understanding nature as a catalyst for economic development in order to improve the country's living conditions. This need arises from the fact that this positioning resulted in damages caused by the over-estimation of human reason, which caused the destruction of nature and the environment, compromising the survival, both human and other species, on earth. Thus, based on Jonasian thinking, this article proposed the need for Mozambican education, in higher education, to be based, not on a utilitarian and anthropocentric ethics in relation to nature and the environment, but on an education that encourages those who are involved to strive to promote greater peaceful coexistence between man and nature, with a view to the survival of future generations and planetary sustainability (Jonas, 2006).

The proposal for an ethics of responsibility presented by Jonas is not of a personal or individual character, but of a political character. For this reason, Mozambican universities need to develop and implement a political pedagogical project in which environmental education is contemplated, in order to ensure human survival and the life of the biosphere in the future. Therefore, Mozambican education and higher education will fulfill their role of fully preparing human

beings for assuming their responsibility, which makes ethics an indispensable element for facing the current logic of immediate production. In other words, education and higher education in Mozambique have an urgent role in preparing citizens for responsibility for the future of life. For this to be effective, *homo sapiens* must resume its precedence over *homo faber*, as stated by Jonas. This implies the need to replace the technological imperative with an ethical imperative that has as a reference point the promotion of life, both human and non-human. This, equally, requires that education and higher education in Mozambique prepare citizens to take responsibility for caring for nature for the good of society and nature itself. In this sense, the essence of higher education and education in Mozambique must be to instill the spirit of protecting nature and the environment, in the present, with a view to improving the living conditions of all species in the future (Alves & Pes, 2018). Education, therefore, has the role and function of making people and society aware that the degradation of nature and the environment promotes the degradation of human nature itself. Human beings and nature are not two separate entities, but interdependent. The health of one implies the health of the other, therefore, in view of the scarcity of natural resources, such as water, it is necessary to have a new attitude, no longer based on the idea of abundance, but rather on the scarcity of natural resources. This means that we need to be aware of this new scenario, and that education and teaching in higher education in Mozambique has this role of awareness-raising.

Recommendations

Starting from the discussion developed here, it remains to be emphasized that the concrete actions that Mozambican universities could take to promote greater peaceful coexistence between human beings and nature could be developed in two perspectives, the first being theoretical and the second practical. Starting with those of a theoretical scope, the same universities could create conditions for the various scientific departments in them to meet and create interdisciplinary projects to jointly mitigate the problem under discussion since the environmental problem belongs to all sciences. In this sense, it is also possible to create disciplines so that all students whose courses have some relationship with this theme, could serve as platforms for reflection to produce solutions to the problems that society is facing in relation to environmental problems and climate change, as explained here.

On a practical level, Mozambican universities should encourage the development of practical and concrete activities for each specific science or even for large areas of knowledge. For example, while students, teachers and researchers dedicated to computer science could consider how to use computer and computer technologies, as is the case with drones not only for the detection of more vulnerable areas and others where one can plant trees more easily, health sciences, economic sciences, human sciences, among others could also get involved in the search for other solutions to the same problem. Within the same scope, the areas of construction and architecture engineering could consider how universities can contribute to the detection of better areas for the construction of infrastructures in safer places, the same being more ecological and more resistant to climate change, and so on.

Likewise, Mozambican universities could also work together and in partnership with governments and local communities to involve the entire academic community in planting trees

not only for environmental protection but also for fruit production, for consumption, particularly in projects where each student and each member of the same community could plant and care for a tree until it grows. The other action that should be taken by Mozambican universities with a view to pursuing the objectives mentioned above would be the creation of teaching, research and extension platforms where large-scale circular economy and recycling approaches would be created and developed to be implemented by all members of Mozambican society. In this way, it would be perceived that the answer to the aforementioned problems would be found through a joint and interdisciplinary work among students, teachers and researchers in the search for technological solutions that are appropriate and specific to the same challenge. This means that, in order to pursue the aforementioned aim, Mozambican universities need, in collective and inclusive work, to contribute to the production and implementation of alternative sources of water, electrical and light resources, transportation and food preparation that are less harmful to nature and the environment, among other solutions. In this sense, the subsequent steps for future research would be to help universities to materialize the proposals presented here.

These proposals are relevant to the present discussion because, as Amartya Sen (1999) states, there is a need to understand that economic activity cannot be dissociated from ethics since both economics and ecology should aim to meet the concerns of life on earth. Sen takes this position when he realizes that, etymologically, the economy, or rather, *oikos*, which means house and *nomos,* which means laws, represents the set of rules that must be used in the management of what Pope Francis calls "our common house". Likewise, ecology, that is, *oikos*, which means home and *logos*, which means study or knowledge, has to do with the study of life or the environment where people meet to promote the well-being of life both human and non-human. Thus, it becomes questionable to dissociate the two terms since they aim to serve the same purpose, which is the maintenance of a more human, more ecological and healthier life on earth. It is not by chance that Sen (1999) comes to defend that the economy constitutes the set of rules of the house so that the necessary things for the same house are not lacking. This means that the economy has to do, first, with ethics and only second, it has to do with resources. Seen in this way, it is perceived that it is from this context that the need arises to recognize the existence of an ethical link between ecology and the economy because the economy is built and sustained by natural ecosystem principles and systems. This means that nature is not just a simple contributing factor to the economy. This is the foundational basis of economic activity, hence the need for education to be constructed for the promotion and protection of this ecological-ethical prism for the well-being of not only man, but also the beings around him and the environment in which he exists (Sen, 2003).

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