

A Conversation with Paulo Freire

PAULO FREIRE, UBIRATAN D'AMBROSIO, MARIA DO CARMO MENDONÇA

(This is a conversation between the philosopher and educator Paulo Freire and two mathematics educators from the University of São Paulo, Ubiratan D'Ambrosio and Maria do Carmo Mendonça)

MC: We are here for a conversation with Professor Paulo Freire and Professor Ubiratan D'Ambrosio about education and mathematics education

UD'A: I confess it is a rare privilege for me to be able to interview Paulo Freire. Formally, I was never your student. But I belong to that legion of educators from all over the world who consider themselves disciples of Paulo Freire. It is a great honour for me to have the opportunity for such a conversation.

PF: For me too. Above all, because I know about, as all three of us do, the continuation of this conversation at some future time in Spain, in front of a great number of mathematicians, of educators who get involved with the problems of teaching mathematics, of understanding mathematics. It gives me great satisfaction to be part of this conversation and I would like to see it developing immediately.

UD'A: We all recognise Paulo Freire today as that great philosopher who has been the inspiration for a number of new measures and proposals in education. You are our philosopher of education. In the beginning, many years ago, when you started your career, your great preoccupation, of course, seemed to have been education in general, but we always talk about Paulo Freire in terms of teaching, 'alphabetising' [1], teaching how to read. There is, of course, in all your discourse, a great concern with the importance of individuals knowing how to express themselves, how to read, how to participate in the world. Let me ask you if, from that moment right up to the present, you saw an equivalent importance in the individual participating mathematically in the world. Do you see an equivalent to literacy, a form of 'mathemacy'? Is there a mathematical equivalent to 'alphabetisation' in your work?

PF: This is a good starting question, the first time I have been faced with this question and I think it makes sense, and not only as a question offered to me. It is a question that should be made to all of us. I confess, on that earlier occasion, I did not

think about this. I would not lie now and say: 'Ha! Even back then, forty years ago, I was concerned with this.' No, indeed I did not think about this before. But today I understand this. I have no doubt about the importance of every effort, which should not be exclusive to mathematicians, to the professor of mathematics, but that in my understanding of every man and woman, mathematician, physicist or carpenter, that is exactly the effort to recognise ourselves as conscious bodies mathematised.

I have no doubt that our presence in the world implied the invention of the world. I have been thinking a lot that the decisive step that made us capable of being human, women and men, was exactly the step by which the support in which we found ourselves became 'the world' and life became 'existence', or rather began to become existence. In this passage, which you never identify as a geographical passage, but as a transition of the support for the world, culture was installed, as well as the invention of language, and a way of thinking that attends not only to the object that is being thought, but which enriches itself with the possibility of communicating and communicating itself. I believe that in this moment we also became mathematicians.

Life, which became existence, was mathematised. For me, and I now return to this point, I believe that a fundamental concern, not only of mathematicians but of all of us, mainly educators, who are responsible for deciphering the world, should be this one: to propose to youth, students, pupils, farmers, at the same time as they discover that four times four is sixteen, they also discover that there is a mathematical way of being in the world. I was saying another day to my students that when we wake up, on our way to the bathroom, we begin to make mathematical calculations. When we look at the clock, for example, we already establish how many minutes we have, depending if we woke up earlier or later, to know exactly the time we will arrive in the kitchen, we will have our breakfast, the time we should leave home to arrive in due time at our classes. This

means that when we wake up, our first movements, even inside our bedroom, are mathematized. For me this is one way of showing the naturalness of the mathematical enterprise.

Regrettably, this is not what is done and I am a Brazilian who pays, who pays very highly, for this. I have no doubt that inside me there is a mathematician that did not have the opportunity of awakening, and that I will die without having awoken this mathematician, who might have been a good one. Well, I believe one thing, that if this mathematician that exists inside me had awoken, I am sure he would have been a good mathematics teacher. But this did not happen and I pay very dearly for this. In my generation of Brazilians from the Northeast, when we referred to mathematics, we were referring to something suited for gods or for geniuses. There was a concession for the genius individual who might do mathematics without being a god. As a consequence, how many critical intelligences, how much curiosity, how many enquirers, how many capacities that were abstract in order to become concrete, have we lost? I believe at this congress [2] one of the things I would do is to make, not really an appeal, more a suggestion to mathematics teachers that, at the same time as they teach that four times four is sixteen or square roots, or this and that, they try to awaken their students to seeing themselves as mathematicians.

UD'A: In your entire discourse, in your theorisation, in your practice, we recognise the political importance you give to the acquisition of language. You say that in order to be free, human beings have to be capable of expressing themselves, must be able to read, must be able to discourse. Do you see something equivalent in mathematics?

PF: I believe that, unquestionably, this possible mathematical 'alphabetisation', this 'math-alphabetisation' [*mate-alfabetizaçao*] or math-literacy, would help the very creation of citizenship. And I will tell how I see it.

I believe that at the moment in which you translate the naturalness of mathematics into a condition for being in the world, you are working against a certain elitism that the studies of mathematics have, even contrary to the desire of some mathematicians. This means you democratise the possibility of the naturalness of mathematics, and this is citizenship. And when you make feasible a greater conviviality with mathematics, there is no doubt that you help to solve a number of questions which are around us, sometimes piling up precisely because of a lack of even a minimal competence in the subject. And why is this democratisation not happening? Because it became accepted that understanding mathematics is something profoundly refined, when indeed it is not, and should not be.

In saying this, I do not mean that mathematical studies should not have the depth and the rigour they must have. The philosopher must also be rigorous, as well as the biologist. I say the following: to the extent to which you do not do it simplistically, but you render the understanding of the mathematical existence of human existence simpler, then without any doubt you help in the recognition of the importance of mathematical understanding, which is as important as language.

MC: This is natural mathematics, the mathematics that says something about natural quantification. Thus, the little boy has something to talk about, for example how he understands multiplication, and the teacher does not see this other vision of mathematics as valid.

PF: This does not happen only with mathematics, this has to do with the presence of men and women in the world. I believe this has much to do with a kind of downgrading of common sense. This has much to do with an elitist posture prevailing in schools, which downplays every contribution that the student can give to the school. In essence, this involves an over-valuation of knowledge called *academic* and the devaluation of common-sense knowledge. This is the epistemological position according to which there is a definitive rupture between one form of knowledge and the other.

In my understanding, there is no rupture, there is an overcoming. I feel that the beginning of an educational practice must be the understanding of the world that the learner has or has had, and not the world-view and the knowledge system of the educator. Although I have insisted on this for over thirty years, I have always been misunderstood – and continue to be so – but in the beginning I was even less understood. We start from what the learner knows in order that he or she can know better, know more and know what he or she does not know yet. I believe that what we do, to start from the world-view of the teacher, shows disrespect, which is an elitist disrespect. The strengthening of a democratic posture resides in overcoming this disrespect.

MC: It is an epistemological belief that makes us want the student to know better, but it is a disrespect.

UD'A: The student goes to the school to receive.

PF: That is it. And even he believes this is so.

UD'A: To implement this new pedagogical posture, it is necessary to change the teacher. The way the teacher has been prepared is fundamental and I know that one of your current projects is to write a book about the preparation of teachers. Is it possible for you to say something about this project, in a way more directly related to our concerns, as mathematics educators? How do you think the preparation of teachers can be revitalised?

PF: Indeed, I am now writing a book, which I hope will not be a notebook nor a compendium, but a book in my style. The provisional title of the book will mention teacher preparation and fundamental knowledge which is necessary for a critical teaching practice. My concern in writing this book is to show that, sometimes even more than knowledge, some awarenesses are absolutely necessary for a teacher and should be present in the education of an educator. For example, maybe the first understanding that needs to become an awareness to be incorporated is the following: educational practice is not founded solely on the ontological inconclusiveness of the human being, but on a conscious awareness of this inconclusiveness.

Education is founded on these two feet, one the inconclusiveness, the other the conscious awareness of this inconclusiveness. Human educability has no explanation other than the assumption of aware inconclusiveness. In the same way, these are the pillars which support hope. Can you imagine how incongruous it would be to be inconclusive, as we are, and not be conscious of this inconclusiveness; not to be immersed in a permanent movement of search, of quest? The being which does not search is inconclusive and does not know of its inconclusiveness.

Here is an example: the *jaboticabeira* [3] which I have in the garden of my house is also inconclusive, since the phenomenon of inconclusiveness is a vital phenomenon, it is not exclusive to human beings. But the level of inconclusiveness of the *jaboticabeira* has nothing to do with my level of inconclusiveness. It is inconclusive, in the same way that my dog is inconclusive, but dogs do not know themselves as inconclusive. In our case, we assumed the inconclusiveness and in assuming it, we are led to search. It would be absurd to search without hope. I can certainly search and not find, but my hope is part of the process of searching. There is no search without hope. It would be an incongruity.

This awareness is not common in educators. Many educators have never been challenged to realise that they are inconclusive. I am writing about this. Another item of knowledge, which I believe is an awareness, without which it is not possible to face the classroom, is to realise that change is very difficult, but it is possible. How could you, Ubiratan, go around the world as you do, to Africa, to Europe, to the United States, talking about mathematics and about how to propose new ways of teaching and doing mathematics, if you were not convinced that there were a possibility of change? It provides the drive.

This knowledge must be discussed, not imposed. It must be brought into discussion, so that the young woman or man who is preparing to be a teacher of tomorrow realises the truism: I

move as a teacher because even knowing that it is so difficult to change, I know it is possible to change. It may even be possible that the agent of a radical change does not belong to my generation, yet without my generation the other generation will not be able to change.

UD'A: We all work for another future, in which we believe.

PF: That is it. Another awareness that is important for the teacher is that to teach is not to transfer knowledge, to transfer contents. To teach is to struggle, together with the students; it is to create conditions for the construction of knowledge, for the reconstruction of knowledge. For me, this is to teach.

If someone is convinced that his or her profession means to arrive at school at 9:00am and to pour forth a discourse with the objective of transferring objects, indeed only shadows of objects, which are the contents, than he or she does not know what it is to teach, does not know what it is to learn. It is necessary for the teacher to have a historical perception that men and women *learned* first, *then* they taught. Learning has always preceded teaching.

But what is happening in schools? Teaching became more important, and learning was bureaucratized with the bureaucratization of teaching. Indeed, the teacher must know that both learning and teaching, are in a contradictory dialectical process, in which the better one learns, the better one can teach, and the more one teaches, the more it is possible to learn. It was in learning socially that women and men discovered the practice of teaching diluted in the act of learning. One day in the history of men and women, one day not so long ago, they discovered that because they were learning it was possible for them to teach, and from this moment on teaching became systematized. But we have lost this perception of history, and we have inverted the roles.

I am also writing about this. I believe that it is sometimes necessary to recapture historically the great role of learning, without any implication that this diminishes the role of teaching.

UD'A: Schools must provide an environment, must indeed be an environment, for sharing the process of search and must not be the place where knowledge is transferred.

PF: Of course. It may sound like I am proposing a lesser role for the teacher. Absolutely not. Unquestionably, the role of the teacher, the role of the one who teaches, is a major role. The teacher has a great responsibility. And the teacher who does not teach does not justify him- or herself. But it is important to clarify what does it mean to teach. And when we try to understand in our own

practice what it means to teach, we have to conclude that the social process of production of knowledge renders every possibility of transfer of knowledge marginal

I generate, I create, I recreate knowledge, I do not swallow knowledge I am reminded of an ironical remark of Sartre's, where he criticised what he used to call the *nutritional* conception of knowledge. He says: tragic and painful is the nutritionist's vision of knowledge, according to which the teacher feeds. Indeed, we have metaphors in everyday language to refer to the problem of knowledge, many of which have a lot to do with nutrition. You talk about having a *hunger* for knowledge, about having a *thirst* for knowledge. You do not talk about a curiosity for knowledge; you talk about a thirst for knowledge. I do not have to drink knowledge, neither do I eat knowledge. I eat a *feijoada* [4], not knowledge. Knowledge, I produce socially.

UD'A: The idea of producing knowledge, mainly in mathematics, is something that has become downplayed. The production of knowledge in the school system is insignificant.

PF: Yes, very much so.

UD'A: I see this opportunity for a conversation with Paulo Freire as really a very important moment for all of us, and I am sure those at the congress who see us will feel we were indeed highly privileged in having this opportunity.

PF: I want to send my greetings, through you who will be there, to everyone who attends the congress, and to say that my absence occurred only because of the care of my doctors. They are making every effort, and I fully agree with them, to extend my permanence in this world.

MC: I would also like to express my gratitude for this opportunity. When Ubiratan said that we all have been, in one way or another, disciples of Paulo Freire, this is true, although not everyone can understand this. Every time we are together we learn something new. You two represent for us a change in model. You Professor Paulo Freire, in education, and Professor D'Ambrosio in mathematics education.

PF: With D'Ambrosio you go beyond the adjective 'mathematics' and can say 'in education' too. Indeed, I see D'Ambrosio as more than an educator, he is a philosopher of education. Now I excuse myself and I will rush to the doctor.

Notes

[1] The Portuguese verb is *alfabetizar* and it means to teach how to read and write. It comes from the word for 'alphabet', but is different from the meaning of "to spell".

[2] ICME-8 held in Sevilla, Spain in August 1996

[3] A common Brazilian fruit tree.

[4] A popular Brazilian dish.

