***Respect to all, the wonderful end of the Besjeda o obrazovanju, here the Besjeda comes to another continent, but all with our wonderful minds, which unfortunately we do not have the opportunity to interview here in Bosnia, but we will talk about that as well. With me is the respected professor Ismar Volić, whom I thank from the bottom of my heart for his time, otherwise a full professor at Wellesley College in Masechusetts, if I said it all nicely? Welcome, Professor!***

You said great, thanks for the invitation, I follow these Besjeda of yours which are really fantastic. I am inspired, inspired, by the intelligence and eloquence of your guests. I think I can only lower your average.

***Do not say that! Like now when I receive thanks - like a wonderful Sermon, great, I say - our only power is to gather smart people, and everything else is up to them.***

***Yes, and I am glad that you have once again confirmed and shown how many such smart people there are in our country, this must not be forgotten and these people must be nurtured.***

That's right, but they're getting quieter, it's getting harder for them, or there are fewer of us, I don't know. What is your impression?

In my activism and activities in BiH, I constantly meet such people, so I am optimistic. I am in contact with top professors, students, researchers in BiH. That intellectual capital in education exists in education, only I hope it is a matter of time before everyone gets to their feet.

***I sincerely hope so. I think it's high time, what my professor says to me: "Nedime, our chances are so small that we no longer have any privileges." I'm glad you returned to the fact that there are serious capacities that could consider education, why do you think does it still exist here in Bosnia?***

I have nothing smart to say here that you and your watch do not understand and do not know. The political system is set up in such a way that this system benefits from the fact that children are crammed into pens and from those pens voters are made for certain parties. People who push children into pens are obviously not interested in education and they do not care about any ideology, they care about some personal enrichment and personal prosperity. So some ingrained Franken system, so decentralized, a weird educational system could only degenerate as a consequence, and it is very difficult to change it.

***I have an interesting question - do you think there is any paradigm about education in Bosnia and Herzegovina, or is education simply a matter of inertia?***

As far as I can see it is quite a matter of inertia. So many elements are left from that old communist system, that kind of patriarchal relationship, where the professor is a semi-god in relation to the children, there is no communication, there is no mutual respect and that is a matter of inertia. But I see changes, there are peaks, things are happening, I think there could be something.

***Because of whom?***

Well, because of people like you, like your agency Step and others, certain people at the University of Sarajevo, certain ministries, these are all people who are in the minority, but there is a lot of talk about STEM in education, STIM in education, it needs art that is key in that story. Two years ago, if you look for STEM in that story and on the portals of what there is, you do a search, there was nothing, and now there is. Something is happening though. That STEM is one, now I'm going to talk and stop me if you get bored, that STEM is one of the avenues, one of the fronts that can attack this system.

***You have talked and written a lot about it, even as an economic potential, I prefer to talk about this common sense - we have no alternative.***

STEM can have a dual role. If we attack those monstrous textbooks and history books that root some intolerance and these absurdities of some national programs and five schools under one roof, it will be difficult to attack, change, because such things allow some interpretation and can be modified at the request of the creator . STEM is more difficult, it is based on mathematics, on natural sciences, it is much more objective. It’s harder to change, it’s not as much plasticine as these others. Not only is STEM, the dual role I see, one that without STEM education there is no economic prosperity in today's technologically driven economies - it is one thing, if BiH is to fight for an independent economy that does not depend on donations, I think that The technological factor is one of the things where one can look. Estonia can be a role model for us in that. So there is this economic aspect of that STEM education, and the other aspect, more interesting to me, is some subversive political aspect, and that is that through STEM education you can look at that equality, where all children learn the same things, in the same way. People who would like to shape children in a certain way cannot do so through STEM, because mathematics is objective. Children approach each other through common interest, STEM, technology, problem solving from society, joint projects.

***I have to ask you while we're at it, I planned that sometime later, but I have to now. Since you are a professor in America, you told me: “I didn't have a job anyway, so I founded the Institute of Mathematics and democracy "and I can't, I first started reading, so I read the mission, and the mission is very interesting to you in the wake of your subversive message. How is math and democracy?***

I have been a dissenter of mathematics in society for many years, and even some years ago I taught some subjects in scriptography and privacy, it has since started, then I started teaching that subject of mathematics and politics at my faculty and from that came the idea for that institute. In fact, the main motivation is that one horror, primarily American, then in the rest of the world, where this newly composed populism, completely wants to destroy reason and reason, and science, and facts, and they want to bring us to that post factual world that is worse than any a post apocalyptic short story, a book that children read now. That is where the idea came from. What is this institute trying to do? It promotes research, research work, education and outreach - how do you say that?

***Breakthrough on something.***

Raising awareness of the importance of quantitative literacy in a democracy. I don’t think you can be a 100% functional participant in a democracy if you don’t understand some basic democratic processes that are driven by quantitative things. The main example is voting, in America, and in BiH, the way we elect presidents is a mathematical monstrosity and any mathematician is appalled at how we elect presidents - by choosing one name and then the person with the most votes wins. It is a realistic vote. It is a mathematical monstrosity and is not representative of the will of the citizens. But if we do not educate the population, that there are better ways of voting, better methods of voting, according to which more representative people will be elected as representatives of democracy, if that education does not exist, then benefits will go to people who do not deserve to be in those positions.

***I would be very happy to go into this topic with you, but they will resent me for leaving education. I will mention again that in one interview you mentioned that agro-tight American policy, but we will not go further. I am interested in this: what is the paradigm of education in America? You’ve been observing both students and your colleagues long enough, what are your beliefs?***

I think that, at least in the circles I move in, I don't know how education is in some other parts of America, certainly a little different than it is here in Massachusetts, because there are several Americas, and it's very difficult to say: "In America it's like this . ”You know, you just said you were in three places in America and you must have seen for yourself that Montana is not the same as Los Angeles. In some groups of American countries where I move, including Massechusetts, the paradigm of education is that education is collaborative work, that the transfer of knowledge is paradoxical - that word implies that someone gives something to someone, that it is a one-way transfer, however, it is not so . In order to be an effective professor, educator, teacher, there must be two-way communication. I think that's what the potential of the last 20-25 years in America has been and I think it's working very well. There is communication, conversation, the needs of the student are understood, on an individual level, there is that some common respect, and it is important to me as a professor that each individual student has achieved some goal and success. Students need to know that, to know that I am there for them, and that I will try as hard for them as they work for me. That two-way education system in America is very important, but of course, it must be done carefully. This does not mean that the criteria are lowered, for every student to be successful does not necessarily mean that the criteria should be lowered, it requires additional work, to keep the criteria at the level, and every student rises to that level is a lot of work. Another thing, two-way communication does not mean that I am heaven with my students, we have a friendly but collaborative professional relationship, again with mutual respect for what I do, and what they do. Third, it is important for students to see that I am really working for them, to invest some work. They can hardly be motivated if I come and just do something, write something on the board and go out. They will hardly find the motivation to invest in it. I think it exists in America. It definitely exists in universities like mine, where we not only work collaboratively and together, but we eliminate that kind of archetype and patriarchal and hierarchical system, where the professor is superior to the students, not only did we eliminate him pedagogically, but even physically. A new center for science is being built at my faculty, where there will also be a department for mathematics. A large number of classrooms in that building will not have standard benches, tables and chairs at all, but will have as bar tables and chairs where students sit. The reason is that when I teach something on the board, or go around group work, that I am not physically in a superior position in relation to the students. That we are on the same physical level, to that extent.

***Does this mean that the teaching role is being actively considered?***

Yeah, right. He thinks about it all the time, s they are constantly trying, testing new pedagogies, new techniques.

***Is there resistance?***

Not that there is no resistance, but there are bodies in all universities that hold something to themselves, that support that work, that have grants for that work, that encourage, that transfer information about new research and studies: how effective this is or how it is not effective according to new research and studies. We are constantly asked if we would like to try a new methodology, if it doesn't work - it's okay, what's the matter, we screwed up one semester, we're going to do something else.

***I am also interested in lower levels of education. Your kids are in it now, so you have at least that insight, is the same story there?***

A very similar story. My children have a completely different attitude towards their teachers, teachers, than I had in Sarajevo. Again, it is a collaborative system in which we work on critical thinking, on which we work on understanding things horizontally, which is the point of STEM education, but it is in every type of education, so my children learn literature, geography, etc. They work on projects that are motivated by real problems. There are no grades until sixth grade, this concept of grades is a complete absurdity.

***I just don't want this to sound like a provocation now, our intention was not to say how it can be done somewhere there, it can't be done here. What do you believe in grades? To whom are they important?***

Well they are important to children as a kind of feedback, some feedback, that's fine. But there is no need for grades up to sixth, seventh grade, so some studies have shown significant and important. Then they are important to administrators and administrations. I would not eliminate grades completely, but I think they are used too much for political purposes. In America, there are those standardized tests that are evaluated, and then financial aid - federal and state, depends on the success of schools on these standardized tests. As much as our schools here are progressive and want to instill a desire for knowledge and learning in children, that they are not oriented towards quantitative assessment, quantitative learning, before that test they are a little burning under their feet for a month, it takes a little to do it well.

***Just to bring it closer to our teachers, why are we talking so confidently about both systems: because you are present in Bosnia, several times a year, and thank you for all the occasions when we had the opportunity to hang out. You are part of the Bosnian - American Academy of Arts, so you are present and you are creating that one important connection between the people and the experts out there and the people and the experts here. I’m talking about exchange again. Will you just tell us briefly about it?***

I will, of course not. BH-American Academy of Arts and Sciences - the name is a bit pretentious, I always say that everywhere, I was not there when the name was given to the organization, because I don't want that some elitist one to be associated with it, when the academy says something, then it's a bit no connection. But we are not like that really. We are a group of professionals. Some people working in the branches of academic, medical, technical, information technology, etc. who have reached a certain level of education and now we have the feeling that this is our experience, knowledge, that might be useful in BiH. It is a simple idea and mission.

***You meet there every year, but this year you canceled so see you next year. Why is it important to keep in touch, I sent you a question in preparation for the interview, in fact I don't know if I sent it to you or I wrote it to myself: how many important people have been irretrievably lost out there? Is there a way to bring back that expertise?***

I don't know, to know how much we have to define what irreversible means. But there are certainly many under any definition.

***I don't go into math, I can't do that with you.***

You can't define things for me inaccurately.

***Sorry. Just don't ask me anything.***

Definitely a lot, by any standards, but I think there are enough of us who are still there. And it would be nice if our state of BiH hires us a little more. That is the missing element, with some exceptions, there are organizations, I have just been in a meeting with people from the Diaspora Sector from the Ministry of Human Rights and Refugees who are following us, supporting us as much as they can. But they have certain resources and capabilities. They are one of the few who call us, we mostly impose ourselves, and in that imposition we sometimes bore people, but I see no other way to convey that message that it is really crucial - to include the diaspora in all levels, spheres, life.

***Of course.***

Not politics, but education.

***Please get involved in education.***

We want and are involved in education. There is so much inertia, but people are somehow killed in the term in our institutions, faculties, high schools, etc. They are fighting for existence, they are fighting against windmills, against these policies, they do not have time to bring us, to cooperate with us, it requires some effort. They are so busy with their existence and saving little of what can be saved in education with their students, that they have no time for us and we we do not condemn and fully understand the situation. What should happen is that some competent institutions, ministries of education, take the initiative to say - push all these people, not only to have them, but they are organized by organizations such as BHAAAS, let us bring them, to give them advice with them about the implementation of quality STEM education, to be in advisory bodies, to come to give lectures, courses, etc. We do all that, but we impose ourselves.

***I have a fun question, could you work in these conditions the way you do now?***

With us?

***Yes. You are here now, but with your head.***

Hard. In the beginning, getting a doctorate in mathematics is very difficult. Not because we don't have staff, we don't have good students, but I saw one student Franjo Šarčević, he was a guest a few days ago. He was my student at the Faculty of Natural Sciences and Mathematics. I repeat this, I can't emphasize this too much, which has fantastic people: professors, students, etc. He had to teach 20-24 hours a week, 4-5 subjects until he was a doctor. I taught one hour a week in America while I was in graduate school so that I could dedicate myself to my doctorate, because you can't do a quality world-class doctorate, if you don't stay in your pajamas for a year, locked up somewhere.

***Thank you very much for letting my Radmila hear that.***

Neither Radmila is guilty, nor is anyone guilty. The system is such that there is simply no support for scientific research, and it is impossible without it. There will be no educated quality without it. Students, assistants must be supported, professors must be paid at state, important institutions, such as the University of Sarajevo, and not at some private unregulated universities there. But it all starts with politics and investment. I curled up again, sorry. This new government in KS has already said that it will reduce the financial support for science for scientific research.

***Okay now, we've been pushing for help now the aftermath of the pandemic, don't do that, it's a good intention.***

Okay, I won't.

***We are not here for the reason of attacking someone and being pessimistic. What do you dream about BH education? Let's face it, one thing is a dream, but what exactly do we need to do now to at least be on the right track?***

I think that some generally good STEM education, designed, and its implementation is very important. I think that teacher training is very important, that it must happen. To establish a department of education at the university level, which really produces quality teaching staff. Those would be good first steps, I think.

***What keeps you still in education?***

My professional work consists of two components. There is this component of me in the classroom with students where I enjoy discovering things together, where I see that spark in their eyes when they understand something, when they understand something that is relevant to the world around them, and so on. That's one thing. And the other is research work, which is equally important, because they complement each other, one could not do without the other. Research work where I discover things, and where I learn, and where I motivate myself and challenge myself. There are some theorems as products, which I prove and papers that I publish, but that is not the point. That some moment when I understood something, which lasts for a very short time, because mostly when I understand something, then ten questions are asked immediately, so I am in darkness again. By the way, the only constant of my professional life is that I am constantly confused. That I don't keep track of something all the time. Which is good, because then I understand how my students, how they suffer the same with math. It is important for them to know that I also have my problems with mathematics, that we are together in that, of course on another level. But the psychological effect is the same. That discovery, something new, when I understand a new mathematics, I prove a theorem, it's something that only I did on the planet, first, and it's really inspiring and inspiring you some moments of lucidity in that academic darkness in which I'm constantly .

***How about that curiosity, how about that curiosity, which some say we were born with, we were born to learn, to explore, how to bring it back to BH schools?***

Yes, but external parameters can very easily quench that desire or simply not cultivate it. Everything is possible for me to deal with what I said, I don't have to fight for existence. I’m not rich, but I earn enough for some decent living. I teach 6 hours a week, I have time for research work. The system is set up so that I can dedicate myself to these things that I do. If I had to deal with administrations and logistics, and go to certify papers, and stand in lines, suffer with politics and sit on some senates and councils, that spark could very easily be extinguished. These professors must simply be sheltered, spaced around them, and allowed to do what they are supposed to do, to learn, and to do what they can do.

***Professors of politics aside, where to start, I would love with the profession, because we believe that the key actor is the teacher - exactly. Now let's put politics aside e, no matter how hard it is, which way is it?***

Well a few things we’ve already said, a synthesis needs to be done. First allow teachers and give them space to reach their educational potential. To enable them to have some collaborative relationship with the children. To have freedom in the curriculum, to some extent to be able to create their own space and their own identity in the classroom. That's actually it. In general, we need to bring back, re-establish, bring back that awareness of the importance of education, because we somehow lack that, because I also remember when I was little how important education was and was worth in those old days - to learn like a grandfather. However, it was respected when it was said that someone was a professor, a teacher, that had some weight. Why Finns are always in the top three in PISA tests - one of the reasons is that they made it so desirable to be a teacher, because salaries and benefits are great. But then they created a system in which it is not easy to be a teacher. You have to have a master's degree which is very demanding, which is not for everyone. The third component is that the awareness of someone who is an educator exists as an integral part of society, as someone who is the most important, the most important, someone who shapes society. Awareness of this exists. It is then motivating to be a teacher and to be a good teacher.

***Clearly, but this mystical problem remains almost unsolvable how to return one value back to the pedestal. We recently talked about commodification, knowledge in general, and the emancipating karma that education can have. What will happen if we continue like this long enough?***

I think everything has already happened.

***There is nothing more to happen. Here is another fatal question - is it too late now for BH education?***

Not, of course. I go back to the beginning again, there are so many quality people. I am really embarrassed to say and say anything negative about the education system, because I immediately remember those fantastic people who are everywhere in that education system, they are in the minority, because some external factors have diminished their voice. So there is absolutely hope. Maybe this is a pandemic, maybe it will help. As never before, the importance of science, scientists, and educational people has come to the fore - at least in America, I don't know how it is in Bosnia, it has come to the fore. Maybe that momentum was needed.

***What did your school look like during the pandemic?***

All schools closed in early March and we moved on to an online lecture. Same as with us. There is a term already made in English - zoom fatigue, in our country it can be "zoom". I'm really tired of this.

***Is that physical contact important and can this ever make up for it?***

Of course it is important. As much as we are all in education that there is this variant that we can have some educational contact online, we have all been reaffirmed that personal contact cannot be replaced, that this is just a pale mirror of education, but it is good that that has. It will not replace live education, because in America this experiment has already happened for about 15 years, maybe you remember when there was a proliferation of these MOOC - Massive Open Online Courses, and that's how the two organizations of that Courser with Stanford -om was bound. They are a for-profit institution, who had to pay something to get involved in that course online. On the other hand is that edX that the Boston University Group founded, my university was involved, led by Harvard and MIT, they were nonprofit, and anyone who wanted to join online courses and lectures could listen to the lectures. There was a big boom in the beginning, 300,000 people signed up for those edX courses, etc. I remember a headline from the NY Times: "The End of Higher Education," but after a few years, nothing more was heard about that edX. Both Coursera and edX still exist today. edX in a reduced version, Coursera mainly for martketng, business etc. gives some certificates in that business - management sphere. But obviously the end of higher education as we know it, education on campus, in a classroom with a professor who is there in a human context with students, did not happen, I don't think it will happen.

***Technology and education go together?***

It goes, of course, but in moderation. Here's a good example is this new building at my university...

***There was something interesting, you told me when you were in Sarajevo, don't forget that, that they hired you when they created the design of that building, that professors and students participated.***

True, each department, including mathematics, had a representative on the committee that included which architect would be brought in, the plan of the building, everything. And I was a representative in front of the math department. At one point, consultants came to us, now they have consultants for everything, groups of people who deal with certain things. For example. a company came to us that only deals with the passage and marking, how to mark the roads and corridors through the building and what is the most logical. However, technology consultants came to us and gave us a presentation, there were about 15-20 of us sitting there, where they told us how they could install walls that are touch screen, circular screens, projections, we all look at each other and don't know what they're talking about. And there’s a representative of information technology - it’s a man of technology. The consensus among us was that we just need a lot of boards and one projector. We don't need anything else. Even this one from the computer science department. There is room for technology, but very cautious and very meaningful and it must not replace that standard relationship of man professor and man student.

***We are all human. And students are people. Blic question - international comparative research: PISA, TIMS, PEARLS, your opinion? Since I had different perspectives in Besjeda, it was really fun to listen.***

As much as these standardized tests are, these are some global ones, in a sense meaningless, but they are the best indicator we have for some ranking in education. They were bad in BIH, PISA was bad in BIH, that did not surprise anyone. I don't think those tests should be seen as anything other than someone with ammunition to go with and knock on the door and ask for changes to be made. I don’t think they are a reflection on how smart or unwise our students are, or how capable or not our teachers are, they should be taken as a reflection of systemic problems.

***I have more, here is one mathematical one - then one final one. What are the chances for BH education, now I don't know if this is indefinite?***

16.5%. I calculated everything, you didn't even have to say the question to the end.

***To such a question, such an answer you will get. Give me, please, a background on how you came to that 16.5%?***

I don’t know, I really don’t know what the odds are.

***You are discovering new theorems, let us also discover what is not going well in BH education. What would an equation look like that doesn't work in BH education, mathematically?***

It would be reduced to a political system in the roughest form. I’m an abstract mathematician, I don’t know those applied calculations.

***This is already for abstractions. Professor, this is beyond common sense.***

Chances - it's hard to say, but there is material, there is potential, we need to push, continue to fight on all fronts.

***I also asked this question to Professor Nerzuk, I'm looking for a subtitle for the Sermons on Education, so I have two suggestions that you prefer:***

1. ***Let's make education great again,***
2. ***Intellectual excursion.***

I like the first one, but you have a red hat, you have to make merge with it, only if there are T-shirts, a red hat.

***"Let's make education greate again." Here that the viewers do not feel so bad that you are so good, as in such an America where critical thinking is taught from an early age we have come to this today?***

Because there are several Americas. In the case of our situation, two Americas. One is that the idea of ​​education that nurtures critical thinking is really implemented properly, and children, and teachers, and governments, and parents, all understand what that means - critical thinking. It is a rough division, into Trump and non-Trump. There are some other values ​​in Trump's America, and that idea of ​​critical thinking and education exists, but it cannot overcome those other instincts of intolerance, exclusivity, hatred.

***This was pure to make us feel better. I would like to ask you for a nice message to the teachers, with that I always end the Besjeda.***

I listened to the Sermons, and mostly the message is the same and I will repeat it: that they, teachers, professors, teachers, are the most important. You are the pillar of society, you are the backbone of society and do not let anyone tell you anything else.

***Professor, I had a lot of fun. Thank you for your time and I can't wait for you to come and work for us again. We have no one else to work with in education.***

That's right, and I can't wait to come. Thank you for the invitation, and once again congratulations this is a wonderful series and I hope you will continue.

***Thank you very much, we'll talk until we get better. We have a long way to go. Nice to meet you, Professor.***

Bye.