# The need of implementation of Computer Science

# into the curriculum throughout the entire educational system

# Romana Vogrinčič, Computer Science Teacher

# Murska Sobota Grammar School, Slovenia

# & President of Computer Science Teachers Section, ACM Slovenia

[Romana.Vogrincic@guest.arnes.si](mailto:Romana.Vogrincic@guest.arnes.si)

Lately we have been talking a lot about teaching computer science in grammar school, which requires a thorough updating.

At the conference on Teaching Computer Science at grammar schools, organized by the Slovenian Academy of Science and Art - SAZU in early December 2018, it was found that in Slovenia we are lagging behind most of the rest of the developed countries in the world. While contemporary computer science (CS) teaching around the world focuses on teaching basic content in the compulsory part of the curriculum throughout the entire educational system from kindergarten to the end of secondary school, in Slovenia we find that subject in the obese part of the general education, in only 1 academic year and only at grammar school. An additional problem is the fact that the curriculum is so widely open that teachers might choose only to confine themselves to the description and use of technology, which gives the wrong impression that we are teaching something that the students have already mastered. The countries that have already implemented the CS reform have also systematically upgraded the system of education and further training of teachers.

Therefore we find it necessary that the basic content of CSs must be implemented into the curriculum in the kindergarten as well as the curricula of elementary and secondary schools, while at the same time we need to ensure quality education and further training of teachers in the field of CS.

Why is learning the basic content of CS and thus programming "essential"? We can be sure that for the students they are more useful than we can measure or even imagine. To the accusations that all students will not be programmers, so why study this, I'm replying that all of them also won’t become mathematicians or bankers but they do learn mathematics anyway, they all won’t become writers but they do learn Slovene, tourist guides, yet they still learn geography or chemists, biologists .... and in this way students build their own view of the world. Digital literacy, however, is increasingly becoming the fundamental need of a modern human being. Just as 500 years ago, people who knew how to read and write had the advantage from the others who could not, now they are ahead of both the left and the right mindful thinking who are digitally literate and not only easy-to-use users of digital technologies, but are mainly creators of these.

However, since computer science is relatively young, the doctrine of teaching computer science, basic concepts and programming is also in its infancy. Therefore, professional training is needed and teachers who are faced with CS teaching also benefit from it.

At today's panel we will hear presentations about what it means and why it is a pompous algorithmic thinking, how to educate teachers for teaching programming, how we are tackling this by organizing and participating in the code weeks and what the organizers of this event recommend to us and what kind of experience in this field our neighbors in Croatia are facing.