Innovation in formal education

Government of Republic of North Macedonia adopted Strategy for Innovation of Republic of Macedonia 2012-2020 ([Стратегија за иновација на Република Македонија за 2012-2020](1)).

The Strategy emphasize that young people are often abundant with intellectual capabilities from which potential ideas can emerge with commercial potential. What is needed for the realization of ideas is to create a mechanism that will encourage creativity among the young population, while at the same time animate the business community about the availability of ideas that can enhance their products, services or processes. One way to establish a link between young people and companies is to organize innovation competitions, not only nationally but also internationally. A successful example is the Dream Line competition in Turkey.[1]

Ministry of Education and Science with the support of World Bank in 2016 started implementing Skills Development and Innovation Support Project ([2](SDISP)). The project is still ongoing and it will be closed on 30 of June 2020. SDISP objective is to support innovation capacity in North Macedonia, improve transparency of resource allocation and promote accountability in higher education and enhance the relevance of secondary technical vocational education. The Project supports interventions which foster education and skills relevant to the job market, and enhance the innovation capacity and activity of firms in North Macedonia. It also addresses key missing elements of the Macedonian innovation system and ailing aspects of the research sector that are likely to be vital for improving the competitiveness of the enterprise sector and Macedonia’s longer term economic growth prospects. It will also help improve absorption of EU funds earmarked for innovation activities. The Project’s direct beneficiaries include students, teaching and management staff from technical vocational education and training institutions who would receive a new curriculum and practical training facilities, as well as training on management, planning, and process improvement capacity; students and staff of universities, research institutions and enterprises will benefit from:
- Implementation of quality assurance mechanisms and financing reform in higher education;
- Grants promoting R&D and innovation; and
- Technology commercialization, global know-how absorption, and industry - university collaboration

The Ministry for Education and Science marked the implementation of SDISP by implementing a simulative activity for connecting high schools with business community. It is a grant program for non-refundable funds awarded for financing projects of vocational high schools in North Macedonia, in partnership with business companies.

The aim of the grant program is to improve practical skills and knowledge of students and create quality personnel, ready for the labor market right after finishing high school or further education with solid vocational base.

The projects objectives are strengthening the cooperation between high schools and companies while improving the vocational education and skills for employability of the students. The project activities should include practical education in schools, organizing camps for technical training during summer breaks, courses for practical training in schools, practical trainings in the companies - right on the post, establishing school companies etc.

As part of this effort, the TVET High School has a built a new laboratory for oenology and soil science, made possible by a grant from the World Bank-supported Skills Development and Innovations Support Project. The project provides financial incentives to encourage enterprises to work with TVET schools - providing on-the-job training for students. Students also have access to a soil laboratory, allowing them to analyze samples they have taken. This process benefits the school as well as the region as a whole - improving the organic production of wine, in accordance with European Union (EU) standards. [3]

The Bureau for Education Development in the curriculum for Gymnasium secondary education, as part of the project activities includes three different subjects for first (Наставна програма Иновации и претприемништво I година [3]), second (Наставна програма Иновации и претприемништво II година [4]) and third (Наставна програма Иновации и претприемништво III година [5]) year called – Innovation and Entrepreneurship. The Innovation and Entrepreneurship subject (activity) is the only one from the list of proposed project activities for Gymnasium that is compulsory for students of the first three years. All of the other subjects (activities) are optional.

Also, in order to develop the creativity and the innovative spirit of young people, starting in 2015, and students in the ninth grade in elementary education study the subject Innovation (Иновации [6]) as a compulsory one.

The teachers who teach Innovation and Entrepreneurship attend trainings organized by the Bureau in cooperation with non-public associations and organizations.

In the Medium-term program of Fund for Innovation and Technology Development for 2018-2020 an Instrument for the Application of Innovation in the Public Sector is foreseen. The Fund has already piloted this instrument through innovative competitions to find a technological solution to reduce air pollution- 02 Challenge, organized in collaboration with the Ministry of Environment and Physical Planning and the Challenge for Young Researchers - Public Call for Financing Research Projects in Primary and in secondary schools, organized in cooperation with the Ministry of Education and Science. [4]
Fostering innovation through non-formal and informal learning and youth work

According to the Global Innovation Index 2019, Republic of North Macedonia climbed 25 places to last year on the list of countries investing in innovation infrastructure compared to last year. According to this report, which ranks 129 countries in the world with 80 different parameters, the Republic of Northern Macedonia is at 59th, a significant improvement over the previous two years, largely due to investments in micro, small and medium-sized enterprises.

The Fund for Innovation and Technology Development was established in December, 2013, with the aim of encouraging innovation by providing additional resources to finance innovation, in view of the need to build a competitive economy based on knowledge. Often they are awarding grants in order to support innovation activities in micro, small and medium-size enterprises. In June 2019, The Fund for Innovation and Technology Development promoted 48 startup projects who won financial support from the Fund, and most of them are led by young people.

In July 2019, The Fund for Innovation and Technology Development and Macedonian Academy for Science and Arts signed Memorandum of cooperation to foster young people's creative thinking, innovation and entrepreneurship. The Fund is already working on creation of a strategic program to foster creative thinking, innovation and entrepreneurship among young people, called the “Fund for Young Minds”. For that aim, the Fund organized 4 focus groups with organizations who are implementing non-formal education, with teachers, professors and parents, as well as with high school and university students. Among the main topics of discussion were the analysis of existing instruments to support motivated students, system failures, the consequences of poor quality reforms, as well as the problems faced by teachers and students. Strategic Program for Promoting Creative Thinking, Innovation and Entrepreneurship in Youth - "Fund for Young Minds" is designed to encompass support through existing successful initiatives, to offer new support measures to foster creativity, innovation and entrepreneurship, as well as nurturing and promoting children’s talents.

In Republic of North Macedonia there is Strategy on Innovation 2012-2020 (Стратегија за иновации на Република Македонија 2012-2020), as well as the Law on Innovation Activity (Закон за иновациската дејност), but none of the documents mentions informal or informal education. In the past, there was almost no promotion of the benefits of non-formal education by state institutions, but in recent years, recognition of informal education slowly enters a small door. In November 2017, the
Minister of Education and Science stated that ‘The support and development of the creative and innovative potential of the individual is an essential foundation for building a knowledge-based society, entrepreneurship and innovation, and for creating a stable and competitive economic system’ [2]. North Macedonia is currently in a process of validation of non-formal and informal learning.

The Strategy and Action Plan for vocational education and training in the context of lifelong learning (2013-2020) [12] recognized the importance of non-formal and informal education and includes the need of improving skills for innovation as a basis for further reforms. The Strategy foresees a number of measures for reaching strategic goals that refer to developing and strengthening skills for innovation.

Organizations offering non-formal education have a key role as they dictate the quality of the trainings they organize. Usually CSO’s are leaders in promotion and organization of non-formal and informal education, but as mentioned above, the Government also recognizes the importance and benefits of it. Thus, with support of Ministry of Finance of Republic of North Macedonia and European Union, in 2018 the Foundation for the Development of Small and Medium Enterprises [13] started with the implementation of the project “Innovation Center: Comparative Advantage for Greater Competitiveness” [14]”, which envisages cooperation of the private sector with representatives from universities, which will help in the implementation of measures for increasing the innovation and competitiveness in the target regions and beyond.

[2] http://www.fitr.mk/%D0%BF%D1%80%D0%B5%D0%B4%D0%B8%D0%B7%D0%B2%D0%B8%D0%BA-%D0%B7%D0%B0-%D0%BC%D0%BB%D0%B0%D0%B4%D0%B8-%D0%B8%D1%81%D1%82%D1%80%D0%B0%D0%B6%D1%83%D0%B2%D0%B0%D1%87%D0%B8-%D1%98%D0%B0/ [16] (Accessed November 22, 2018)