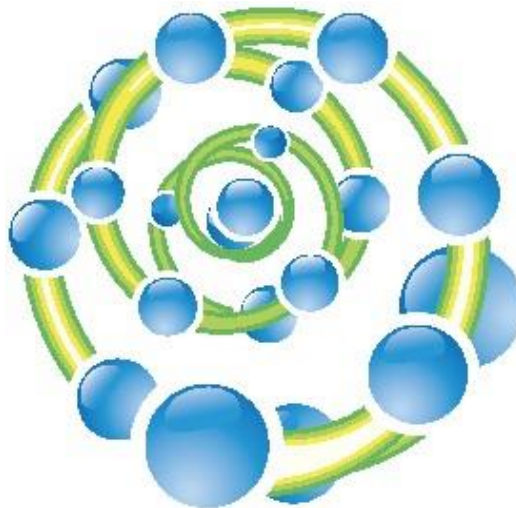


Innovation in VET

Cyprus



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A. Introduction

Investment in research, innovation and entrepreneurship features prominently in Europe's 2020 strategy for smart, sustainable and inclusive growth. Europe 2020 places innovation at the centre of the policy agenda with a clear reference to diverse priorities and flagship initiatives, which also include the digital agenda aiming at helping Europe's citizens to make the most of digital technologies. Partnerships for innovation have been one of the Bruges Communiqué short-term deliverables for the period 2011-14. A new set of Riga deliverables includes innovation in VET and key competences. Following Europe 2020 strategy, the concept of smart specialisation was developed as a new approach for increasing the efficiency of European investment in research, innovation and entrepreneurship.

A strategy for smart specialisation for Cyprus, which is an *ex ante conditionality* for the EU member-states to receive financial support through the structural funds was approved by the Council of Ministers in March 2015. Its goal is to boost innovation through a rational and effective use of public funding, in order to achieve economic growth and prosperity. The strategy identifies priority sectors that are expected to contribute significantly to economic growth, while it refers to the value of VET and includes it in several actions.

The Ministry of Energy, Commerce, Industry and Tourism has formulated the outline of the innovation policy regarding enterprises, which has been approved by the Council of Ministers. The main aims of the policy include, among others, the support of enterprises to develop competitive innovative products and services, the development of cooperation between innovative SMEs and researchers, and public authorities and investors, the provision of access to financing for the creation of innovative products and services and the promotion of active participation of enterprises in European initiatives.

Policies have started to be implemented in Cyprus to support learners of secondary technical and vocational education (STVE) in acquiring skills needed for creativity and innovation, which are an integral part of entrepreneurial skills. A pilot example is analysed below in Section B. Furthermore, entrepreneurship components, such as the acquisition of career management skills and practical training in industry are included in the revised STVE curricula.

A policy scheme for the promotion of innovation in training and development will be implemented by the Human Resource Development Authority of Cyprus to replace a terminated Scheme, which encouraged enterprises to prepare and implement proposals that include research and innovative ideas. Also, through the single- and multi-company training

programmes it subsidises, the HRDA encourages and supports the promotion of research and innovation. Among the approved themes for these programmes, which are communicated to all training providers, the promotion of research and innovation features prominently.

B. Example

B.1. Background

The Cyprus economy faced a severe economic crisis that had adverse effects on employment. The financial, banking and construction sectors have been among the economic sectors most heavily burdened. As a consequence, the government appealed to the European Stability Mechanism in 2013 and signed a Financial Assistance Facility Agreement, which includes an economic adjustment programme 2013-16. The programme focuses on restoring the soundness of the financial sector, including its appropriate downsizing, achieving sustainable public finances and promoting structural reforms to enable the economy to return to robust competitiveness, growth and job creation.

The downsizing of the financial sector highlights the need to redirect the economy and focuses resources on economic sectors with high growth potential. At the same time, in order to return to sustainable growth, it is imperative to enhance competitiveness of local products and services through the introduction of new technologies and stimulation of innovation and creative thinking.

The field of industrial design and development of innovative products has been identified by the Department of STVE of the Ministry of Education and Culture (MoEC) to have the potential to contribute not only towards the support of existing industrial units, but also towards the development of new sustainable industrial units.

B.2. Implementation

In 2013/14, the Department of STVE implemented a programme entitled “Industrial Design and Innovation”, aiming at the promotion of industrial design and innovation through cooperating with the private sector. Within the context of the programme, partnerships for creativity and innovation have been developed.

The programme was implemented in cooperation with distinguished Cypriot Architect and Industrial Designer (advisor) who lives and works in Copenhagen, Denmark. It was co-financed by the European Social Fund of the EU, within the context of the project “In-Service Training of Secondary School Teachers”.

For the implementation of the programme, the Department set up a Working Group in each of the 11 Technical Schools participating in the programme. The eleven Working Groups comprised teachers and students and about 100 persons were involved in the project.

The teachers' objective was to acquire additional specialised, practical and professional knowledge, skills and competences in the subject of industrial design and innovation, in order to help them teach this subject in an effective manner to students of upper secondary technical and vocational education.

The students' objective was to become acquainted with the subject of industrial design and innovation, by acquiring knowledge, skills and competences in the areas of identifying the need for a product, doing market research, developing and discussing ideas and concepts, presenting various design concepts in the form of 2D and 3D rendering, and developing concrete 3D models of the designed products. The tasks mentioned above were achieved with the assistance and support of their teachers participating in the Working Groups and under the general guidance of the advisor, through a number of telephone and video conferences and also during the advisor's two visits to Cyprus. During the programme, the students were given the opportunity to effectively implement the knowledge triangle (education – research – innovation).

B.3. Results

Teachers and students participating in the Working Groups were introduced to the product development process and were guided to research, design and develop 3D models, through 3D printing, of the following ten innovative products:

- **Garage with Solar Panels for Charging Hybrid/Electrical Vehicles (Technical School “Makarios III” Nicosia):** The garage has been designed to be part of the house. For optimum energy production, it should have south orientation. The end product will provide various usage and installation options to the user, in order to have increased marketability.
- **Multiform – Multipurpose Street Pavilion (A' Technical School Nicosia):** The Street Pavillion can be used, among other uses, as an information point, a souvenir shop and a kiosk. The end product will be energy sufficient through the installation of photovoltaic panels. It has been designed in a way to be easily constructed / assembled and transported.

- **State-of-the-Art Key ring that Detects the Driver's Consumption of Alcohol (Technical School Paralimni):** This key ring is a device which detects the amount of alcohol in the driver's blood and prevents them from starting the engine if the result is not within the permissible limits. In this case, the end product will send an SMS to the smart phone of a relative for help, as well as a signal indicating the position of the vehicle through GPS.
- **State-of-the-Art Key that Detects the Driver's Consumption of Alcohol (Technical and Agricultural School Famagusta/Avgorou):** Similarly to the above, this product is a device which informs the driver about the amount of alcohol in their blood. The product obliges the driver to check their alcohol consumption and allows them to start the engine only in case the result is within the permissible limits.
- **Walker for Senior Citizens (Technical School Larnaka – Ayios Lazaros Technical School Larnaka):** This product has been designed to help elderly people to move about, mainly outside the premises of their house, for shopping or for a stroll. It features a rain/sun protection system, GPS with an emergency button, a seat for resting and a shopping bag. The end product will be constructed with aluminium and synthetic materials.
- **Multiform Infant Booth on Wheels (A' Technical School Limassol):** The Multiform Infant Booth on Wheels is a product that can be used as a cot, a cradle and a stroller. It is anthropocentric, as its main aim is to upgrade the quality of life of both the infant and its parents. It has been designed to cater for needs which are not met by existing products that are available on the market.
- **Multiform Booth on Wheels for the Provision of Various Services (B' Technical School "Gregoris Afxentiou" Limassol):** The Multiform Booth on Wheels can be used for the provision of various services to citizens. With some minor alterations, according to the intended use, it can be used as a first aid unit, a tourist information point, a fast food restaurant, or a small animal clinic/parlour.
- **Magnetic/Solar Vehicle for Transporting People with Kinetic Problems or for Guiding Tourists (C' Technical School Limassol):** The Magnetic/Solar Vehicle will operate autonomously due to its innovative magnetic navigation system, and also by using solar energy. The front wheels will move on tracks to enable the vehicle to be used in all weather conditions and, if needed, to climb steps.

- **Benches with Solar Lamps (Technical School Pafos):** The Benches with Solar Lamps can be used at bus stations, parks and areas where a lot of people gather together. The end product will feature USB connectivity for charging mobile phones and a self-compacting waste bin.
- **Multiform Autonomous Unit for Providing Various Services to Citizens (Technical School Polis Chrysochous):** The product has been designed to cater for the needs of the citizens or tourists of a town for information, lighting, cleanliness and advertising. The Unit will be energy sufficient due to the solar panels that will be installed on its roof.

The Industrial Design and Innovation Programme has contributed to the cultivation and development of the element of innovation in STVE, which is expected to have a beneficial effect on the future introduction of the subject of Industrial Design in Technical Schools, as well as on the development of Industrial Design in Cyprus.

Towards the end of the programme, in April and May 2014, the designs and the 3D models of the above-mentioned innovative industrial products were exhibited in all major towns of Cyprus with great success. The objective of the six exhibitions was to illustrate the significance of innovation and creativity in Cyprus, since these two areas have the potential to generate ways of combating the existing grim economic situation and contribute towards growth and prosperity.

Students of the third grade of Gymnasium visited the exhibitions with their teachers, in order to get acquainted with the work and achievements of Technical School students. The exhibitions that took place have contributed to enhancing the image of STVE in Cyprus.

The above-mentioned designs and 3D models of the products were exhibited at the Larnaka International Airport, where they were hosted until January 2015. The inauguration of the Exhibition at the Larnaka International Airport was celebrated by the Under Secretary to the President, in the presence of the Minister of Education and Culture, government officials, academics and prominent businessmen.

Due to the success of the Industrial Design and Innovation Programme in the school year 2013-14, the Department of STVE of the Ministry of Education and Culture decided to implement the Programme again in the school year 2014-15. The duration of the new programme was from December 2014 to May 2015 and it was financed by the Support Group for Cyprus of the European Commission, in an effort to assist the Cypriot authorities to restore the competitiveness and growth of the economy and create new jobs. Within this wider context

of enhancing the competitiveness of the economy, the introduction of the subject of Industrial Design in the curriculum of STVE is also planned.

In order to introduce the subject of Industrial Design in the curriculum of STVE, a Team of Experts has been set up at the Ministry of Education and Culture, including policy makers and teachers of VET. The Team of Experts collaborates closely with the advisor who guides the work of the Working Groups set up in each Technical School participating in the programme in order to obtain practical and professional information regarding the sector of industrial design and innovation, as well as advice which will help them develop relevant programmes of study for the new subject of Industrial Design. Since 2015/16, the subject of Industrial Design is offered by a Technical School in Nicosia.

The programme will serve as a pilot, marking the beginning of a wider project which will gradually involve the Polytechnic Schools of public and private Universities in Cyprus, as well as enterprises.

Conclusions

The introduction of innovation and creativity in VET curricula enhances young people's skills for entrepreneurship, innovation and creative thinking and can empower them to adapt to change and drive change through designing and developing new products and services. The students will become acquainted with the contemporary needs of citizens and will consider the opportunity to set up their own business. In this way, innovation enhances and safeguards the competitive advantage of enterprises and contributes to job creation.

Investment in research, innovation and entrepreneurship through the implementation of various appropriate policy actions is expected to contribute to economic process, helping the economy to recover from the economic recession and return to sustainable economic growth.

Bibliography

Cedefop ReferNet Cyprus (2013). *VET in Europe – Country report 2013*. Thessaloniki: Cedefop. Available from Internet: <http://www.cedefop.europa.eu/en/publications-and-resources/country-reports/cyprus-vet-europe-country-report-2013>.

Directorate General for European Programmes, Coordination and Development (2013). *Cyprus National Reform Programme 2014*. Nicosia: Directorate General for European Programmes, Coordination and Development. Available from Internet: http://ec.europa.eu/europe2020/pdf/nd/nrp2014_cyprus_en.pdf

European Commission (2010). *Europe 2020 - A strategy for smart, sustainable and inclusive growth*. Brussels. Available from Internet: <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2010:2020:FIN:EN:PDF>

Eurydice (2011). *National system overview on education systems in Europe*. Brussels: EACEA. Available from Internet: http://eacea.ec.europa.eu/education/eurydice/documents/eurybase/national_summary_sheets/047_CY_EN.pdf.

Ministry of Education and Culture (2004). *Εκπαιδευτική Μεταρρύθμιση. Education Reform*. Nicosia: Ministry of Education and Culture. Available from Internet: http://www.paideia.org.cy/upload/ekthesi_epitropis.pdf

Websites

Directorate General for European Programmes, Coordination and Development www.planning.gov.cy

Europa www.ec.europa.eu

Eurydice eacea.ec.europa.eu/education/eurydice/index_en.php

Human Resource Development Authority www.anad.org.cy

Ministry of Education and Culture of Cyprus www.moec.gov.cy

Ministry of Labour, Welfare and Social Insurance www.mlsi.gov.cy

ReferNet Cyprus www.refernet.org.cy

Annex: Members of the ReferNet Cyprus Consortium

1. National coordinator

- 1.1. Human Resource Development Authority of Cyprus (www.anad.org.cy)

2. Ministries/Government departments

- 2.1. Directorate General for European Programmes, Coordination and Development (www.dgepcd.gov.cy)
- 2.2. Ministry of Labour, Welfare and Social Insurance/Department of Labour (www.mlsi.gov.cy/dl)
- 2.3. Ministry of Education and Culture (www.moec.gov.cy)
- 2.4. Statistical Service of Cyprus (www.mof.gov.cy/cystat)
- 2.5. Cyprus Academy of Public Administration (CAPA) (www.mof.gov.cy)
- 2.6. Pedagogical Institute (www.pi.ac.cy)
- 2.7. Cyprus Productivity Centre (www.mlsi.gov.cy/kepa)

3. Social partners: employer and trade union organisations

- 3.1. Cyprus Employers and Industrialists Federation (www.oeb-eif.org)
- 3.2. Cyprus Chamber of Commerce and Industry (www.ccci.org.cy)
- 3.3. Cyprus Confederation of Professional Craftsmen and Shopkeepers (www.povek.com)
- 3.4. Cyprus Workers' Confederation (www.sek.org.cy)
- 3.5. Pancyprian Federation of Labour (www.peo.org.cy)
- 3.6. Democratic Labour Federation of Cyprus (www.deok.org.cy)
- 3.7. Cyprus Union of Bank Employees (www.etyk.org)

4. Other organisations/non-profit making organisations

- 4.1. University of Cyprus (www.ucy.ac.cy)
- 4.2. Research Promotion Foundation (www.research.org.cy)

5. National agencies/units for managing European programmes/initiatives

- 5.1. Foundation for the Management of European Lifelong Learning Programmes (www.llp.org.cy)
- 5.2. National Eurydice Unit (www.eurydice.org)