CRYPTOPOLIS –

Innovative Teaching Methods for Financial and

Crypto Asset Literacy for Secondary Schools

CATALOGUE ON GOOD PRACTICE IN INNOVATIVE TEACHING METHODS AND TRAINING NEEDS IN THE FIELD OF FINANCIAL AND CRYPTO LITERACY

Summary

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Introduction

The CRYPTOPOLIS (Innovative Teaching Methods for Financial and Crypto Asset Literacy for Secondary Schools) project's main objectives can be described as follows:
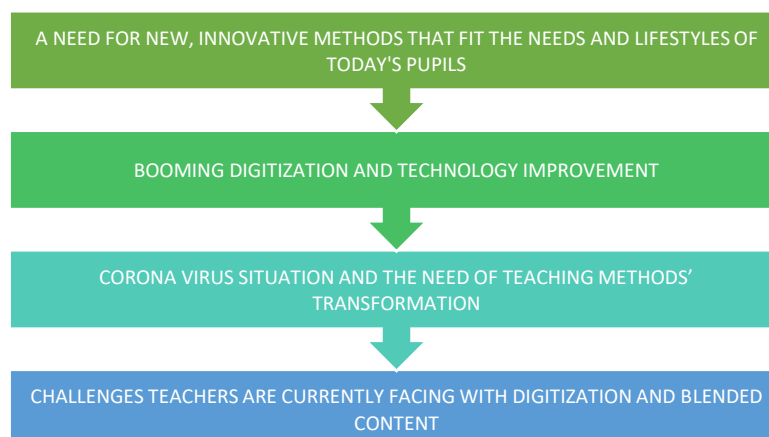
- ❖ To increase the capacity and readiness of secondary schools to manage an effective shift towards digital education in the field of crypto and financial literacy, and
- ❖ To improve the financial management knowledge of teachers

The project is also aiming at supporting teachers in delivering competence-based teaching, as well as making teaching careers more attractive and diverse, where developing innovative teaching and assessment methods and including new topics in the school curriculum.

In order for the above to be achieved in its completeness, there have been specifics steps undertaken in compliance with a research methodology followed closely.

Within the framework of the Cryptopolis project, Project Result 1 is a key work package since it has the objective to provide a detailed overview on the existing innovative and/or digital tools for education that the contemporary pupils and students recognize as effective towards mastering required within the curriculum competences. Moreover, it serves as a needs and gaps analysis of both teachers and students within the financial and crypto-literacy field, which on the other hand is to be used as the background data-based information for the Skill-card development and elaboration.

The rationale behind Project result 1 of the Cryptopolis project can be described as follows:

A NEED FOR NEW, INNOVATIVE METHODS THAT FIT THE NEEDS AND LIFESTYLES OF TODAY'S PUPILS

⬇

BOOMING DIGITIZATION AND TECHNOLOGY IMPROVEMENT

⬇

CORONA VIRUS SITUATION AND THE NEED OF TEACHING METHODS' TRANSFORMATION

⬇

CHALLENGES TEACHERS ARE CURRENTLY FACING WITH DIGITIZATION AND BLENDED CONTENT

In order to observe the set steps within the Project proposal, as one of the first outcomes within the project, a Common report has been developed. The Common report focuses on the identification and

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collection of good practices from Austria, Slovenia, Spain and the Netherlands about innovative and/or digitized educational and training concepts for financial and crypto literacy. Moreover, the report also draws insights on the conducted Focus groups with teachers and lecturers from secondary as well as higher educational institutions and it elaborates upon the findings from the Online survey participants of which were pupils and students from the above-mentioned project-consortium countries.

In order to give a complete overview of existing educational practices, the specific needs and the existing gaps, a diversity of research methods was applied: (1) a desk research underlying best practices, (2) a focus group in order to get qualitative information allowing to tailor the course to the teachers' and pupils' preferences/needs and expectations and (3) an online survey in order to better understand pupils' and students' profiles and needs in terms of financial literary and cryptocurrency competences' development within education.

This output is the compilation of results of research within the project consortium counties: Austria, Slovenia, Spain and the Netherlands. Its conclusions guide the development of the IO2 (skill card creation and innovative teaching methodology toolbox design) and consequently IO3 (trainings and development of the Online Academy for Financial and Crypto Literacy) and supports the consortium in creating project outputs that are highly beneficial to the primary target group of pupils and teachers within secondary education.

Desk Research

The Desk research served the purpose to gain a better understanding on existing good practices in the project consortium countries (Austria, Slovenia, Spain, the Netherlands) on innovative and/or digitized teaching methods and tools both within and outside the scope of financial and crypto currency literacy. Each partner identified at least five best practises in their country, while overlaps could clearly be noted.

The main result identified through the desk research in the countries involved in the project is the fact that there is already an existing pool of good practices which are both innovative and digital and can be applied to diverse educational contexts. The ones that are mentioned in more than one country are: Mentimeter, Mural, Kahoot, Kahoot!, EdPuzzle and business stimulation games.

In the four project consortium countries there are many teaching strategies and applications being used such as: critical and lateral thinking, escape room scenarios, Investopedia, World Map, GeoGebra, PassaPalabra, and many others.

The content results from desk research show that the following themes are consistent part within the analyzed good practices and were identified as most appealing and effective while using the tools/methods:

- User-friendliness
- Flexibilization in using for different class sizes
- Necessity of Wi-Fi
- Need of more than one computer at play
- Learning videos/knowledge clips/instructional digitized scenarios
- Stimulating interaction
- Evoking and involving risk-taking.

The remark that needs to be made is that none of the listed good practices had so far been used in specific for crypto literacy topics, only to a certain extent in economics and finance-related contexts. A lot of the presented teaching tools/methods are transferable and can therefore be used by developing the CRYPTOPOLIS Skill-cards further.

Focus Groups

Each partner country within the Project consortium organized a focus group with a minimum of 5 participants (teachers from secondary and higher educational institutions) following a common methodology and respecting ethic and anonymization procedures. The focus groups´ main purpose was to deepen the insights gained from the desk research and elaborate on further opportunities, needs and existing gaps.

In all countries participants of the focus groups gave important inputs about their needs, concerns and challenges related to teaching financial and crypto literacy. In general, teachers would like to be fully equipped with both knowledge as well as teaching tools on how to approach the contemporary trends in finance and crypto education. Further they expressed the need to improve their knowledge and awareness about the security issues related to crypto currency and risk undertaking both from the side of the teacher showing specific knowledge as well as from the side of the student acting (or not) entrepreneurially.

Further, focus group interviews showed that it is important to have digital applications incorporated for interaction with teachers from diverse schools and/or countries and exchanging experiences and good practices among and with students and teachers.

The main conclusions for **digital teaching tools** that were shared by the teachers were:
- Pupils/students are highly attracted by digital teaching tools and thus they need to become a leading part of financial literacy education.
- Everything what is in a digital format keeps the attention of pupils/students, which needs to be incorporated into the educational/course design.
- The digital tools are the most innovative that are currently available, however not necessarily the most effective.
- Overloading the pupils/students with digital tools is not preferred. There has to be a combination and learning environments of the kind of hybrid and blended ones need to be in place.

The main conclusions for the **innovative teaching tools** are:
- When gamification/playfulness are being used in the classroom, the students are highly

involved and their attention span increases.

- Flipped classroom and Scape(Escape) room are very successful when it comes to the ability of learning to learn and going beyond one-direction teaching.
- Pupils/Students like to share their videos and discuss in class using their presentation, thus becoming the leaders in content development and provision and able to directly apply theory in practice.
- There would be a need for a simulator game to be designed for financial and crypto literacy
- The teachers emphasized on the importance of storytelling and using it as a concept with diverse educational tools.
- Knowledge clips are evaluated very positively by students/pupils and in various contexts.
- Flipping the classroom -> using didactical tools as debates, discussions and implementing own workshops are also very successful teaching strategies that the teachers emphasized upon.

Regarding **the teaching on digital financial & crypto literacy** the main conclusions can be summarized as follows:

- Teachers are to a certain extent restrained from teaching crypto literacy because of either lack of or insufficient knowledge and moreover because of the dynamic and unstable developments.
- Teachers have claimed the very big need of developing materials for financial and crypto literacy which would be the basic foundation to learn and further on teach.
- There is so far no trustworthy data base of educational tools and/or a platform of financial and in specific crypto literacy tools and methods to be used in education.
- Also fear is stated by teachers to not mislead the students because of a wrong direction due to a lack of knowledge
- It is important for teachers that financial terms are taught and incorporated more into the classroom

Online Surveys

After having gained an overview of the already existing good practices and also the specific needs and gaps shared by the teachers, the Cryptopolis project team aimed at identifying the specific needs of one of the primary target groups of the project, the pupils and to juxtapose those to the ones of the teachers.

In order to be able to obtain as much input as possible, a Questionnaire targeting at pupils was designed and agreed upon. The questionnaire aimed at creating a needs and gaps profile of the pupils to be able to create teaching tools and methodologies that would tackle the issues at stake and serve the purpose of financial and crypto competency mastering.

Partners agreed on a common survey translated into the national languages or used directly in English to be circulated through online channels among the pupils of the 4 partners' countries. More than 370 responses were collected.

The results of the need of analysis for pupils are the following:
- Many students are interested in crypto literacy and pay attention when teachers talk about this topic being really driven to understand more and better.
- Not only digital tools have to be used, the pupils need face-to-face interaction and understanding that they co-create together.
- Lack of information and reliable resources make teachers unable to cope with the challenge of teaching the crypto literacy which is something that is also reflected in the way pupils tackle the topics outside the school context and environments.
- There is a big need of more knowledge in crypto literacy so that the students could follow content in any educational scenario.
- The pupils and the students are busy with acquiring knowledge and competences about crypto currencies and finance in general from many diverse (not necessarily) reliable sources and would appreciate a lot the support of the teachers in guiding them through these domains.
- Students/pupils in general are interested to know more about cryptocurrencies and are willing to explore and discuss the above with both their classmates as well as with their teachers.
- Savings and Stocks are very well-known concepts and are still the prevailing ones in number

when used by students to invest or expand their portfolio of finances.

- Students/pupils state that they know more about personal finance concepts and less about digital finance concepts.

- What is also interesting is that the pupils know very little about cryptocurrencies (36,8%) and only 9,4% claim to know a lot, which as well has to still be verified and further on explored.

- 14,5% of the pupils already own cryptocurrencies (and 8,8% own a crypto-wallet) and their interest in being supplied with up-to-date knowledge and competences is immense.

- According to the online survey results personal finance management, investment, taxation are topics that students know the less about. Robo advisors, finance Chatbot and mobile trading are the topics in the field of digital finance products that pupils know the less about.

- Pupils are the most interested in the following topics: savings, investments, security, working of crypto market, scams, awareness of financial risks, insurance, personal money management, and online banking.

Gap Analysis

Regarding to the gap between the existing teaching and the needs stated, it was concluded that:

- Teachers can use the results of this project in new subjects.

- The platform should be teacher-oriented to initiate teachers into financial and crypto literacy.

- Stock exchange or business simulation games would also have a lot of success.

- Simulators should be design to teach financial concepts such as risks, liquidity, trading systems, etc.

- The project could help to understand abstract concepts through board games, card games or posters. In addition, activities such as creating their own virtual coin can be useful to students.

- The platform should include instructions and materials for Flipped Classroom.

- Videos should be used to provide contents as well as activities to help students to make their own videos and share them.

- Quiz games should be used to complement lessons (for example, Kahoot).

- EdPuzzle has the advantage of mixing videos and quiz.

- Developed tools should be able to be used in individual and team work.

- The platform should help students from different countries to work together on different topics.

- Responsive design: Platform digital contents should be suitable for mobile devices (phones and tablets) to learn out of the computer room.

- The platform contents should be classified in different levels

- The platform contents should be able to identify objectives related to financial education.

- The platform should be able to identify reliable sources to learn and generate subjects of discussion.

- There is a huge gap between the offer and needs in this field

- Teachers are open to new teaching methods

Notably, knowledge/skills and competences on the topics of financial & crypto literacy seem to be lacking from both the students' side, and the teachers. Some of the teachers were open to taking on courses and training offered by their institutions or outside sources in the time they have, in order to add to their own skills, before teaching. Some found it difficult to add to their already over-burden agenda. This fear may be resolved if appropriate trainings are held, that will help with their knowledge and confidence in this area.

Conclusion

In this phase of the project, as a result of the analysis of the four country reports and based upon the Common report generated within Project result 1, a great need was identified related to knowledge about financial literacy as well as crypto literacy both from the side of the students as well as from the side of the teachers. In some cases, when it comes to the teachers, that demand was not explicitly stated due to the overload of topics and sub-topics within the Financial and Economic courses at secondary schools, which is also a point to take into consideration and link to the impact the above can generate.

As there are no specific courses provided in the field of financial education in the secondary schools (mostly incorporated in other modules/courses), there is a big gap between the offers and needs. Results from all three methods (desk research, focus groups and online survey) implemented showed that there is a need to introduce and embed into the curriculum a general knowledge on financial literacy as well as crypto literacy. Pupils do not know much about the topics, therefore there is a need to provide them with basic terminology from the field at the beginning and after that proceed with the content connected to personal money management, saving, investments, taxation as well as to crypto literacy. As for crypto literacy the process of how crypto market works, determination of price on the crypto market as well as security topics should be included in the training according to the interests of pupils exposed in the survey. On the other hand, also teachers need to gain appropriate competences and skills related to financial and crypto literacy. The level of their knowledge relates to their personal interest in the field, therefore there is a need to increase general knowledge.

When observed closer, it was stated by both the pupils as well as the teachers that the notion of playfulness, gamification, simulations and digitized applications need to be present when referring to teaching financial and crypto literacy. Pupils found financial skills to be important in both their professional and personal lives, and often search for it on rather unreliable places (e.g., YouTube). Teachers inquired about reliable and playful sources as well as interaction and experience exchange with other teachers on regional, national and international level. They hoped to have the time and space to include such topics in their current overloaded curriculum, and some suggested online platforms as a wise alternative source for dissemination of the knowledge related to this area also for the value of student interaction and more learning insights generated.