code4sp
coding for social promotion

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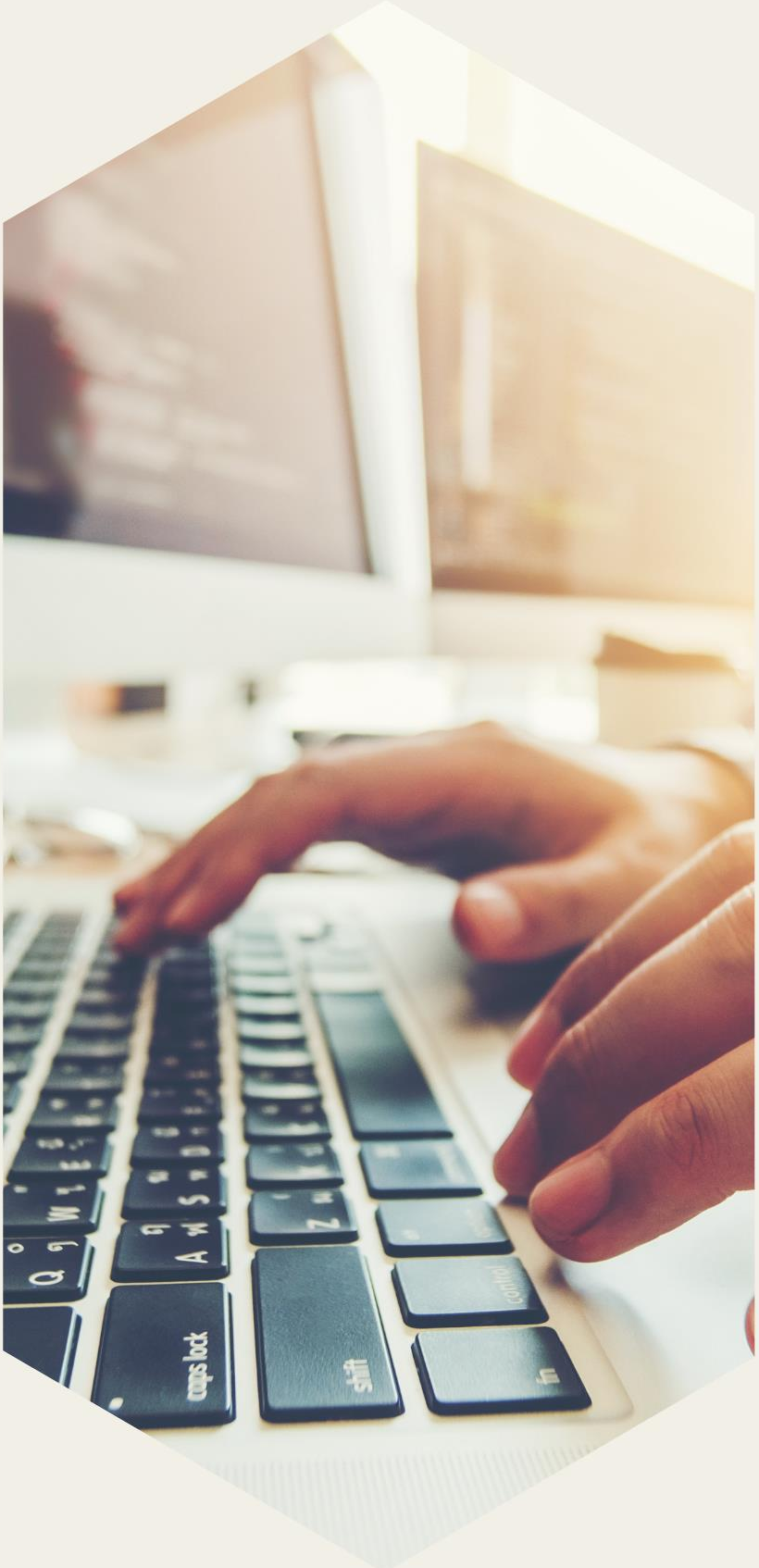

Output 2.5: The Code4SP Implementation Guide

WP2: Knowledge Exchange and Transferability Plans

Prepared by:

Center for Social Innovation

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Introduction

Aim of the Implementation Guide

The present document entitled Implementation Guide falls under Work Package 2 (WP2) Knowledge Exchange and Transferability Plans", led by CSI with the contribution of all partners, and agreed upon by all partners.

The Implementation Guide is drafted after the completion of the training mobility, the round table activities and the revised Report "initial transferability plan".
The Implementation Guide will be built to facilitate the implementation of the Code4SP methodology, on the basis of the CodeDoor best practice. It will include a description of the adjusted Good Practice, the methodological processes/guidelines, the tools, the activities and the evaluation. Although it will be built on top of the selected Good Practice, it will incorporate the suggestions from T2.4, thus introducing the innovative component in the implementation of the Good Practice.

Work Package 2 Overview

The purpose of WP2 is to support partners in understanding, identifying, and responding to the needs of the project. This stage of the project is intended to provide partners with the necessary knowledge and awareness regarding the state-of-the-art in each participating country with respect to the policies and best practices that exist regarding the provision of coding opportunities in non-formal education contexts. The resulting analysis will offer compiled information that will form a starting point for the Work Packages that will follow.

A key aim of the research conducted for WP2 is firstly to provide a thorough analysis of the **CodeDoor best practice**, and secondly to indicate **existing good practices** and, when possible, reinforce them. At the same time, however, research is also aimed towards **identifying relevant policies** in the partner countries related to the economic integration of disadvantaged or marginalized populations, and mores specifically through coding methodology initiatives. In this context, WP2's role in the overall project is to set up the scientific foundations for the **development of innovative solutions** (such as the training program and education resources that will follow), which will address and hopefully fill existing gaps.

More specifically, WP2 aims at investigating the original CodeDoor best practice by delimiting the extent to which the multiple phases of the latter will be exploited by the Code4SP methodology, considering the needs analysis, policy gaps and peculiarities of each of the pilot testing national contexts. Concurrently, the original CodeDoor best practice will be contrasted and likened with regional best practices which have embraced an identical rationale as a means of economic integration of disadvantaged or marginalized populations, whilst being referred to concrete methodologies along with their limitations and strong aspects, enabling factors/environment and engaged actors (e.g. local authorities) and impact at a policy level. As such, this activity will operate as a knowledge basis while being used for the determination of specific needs and interests, by giving emphasis on detected gaps in terms of local/regional/ national policy considerations that could potentially be tackled by Code4SP.

The CodeDoor Original Best Practice

CodeDoor started as a private initiative with one person, supported by two people with big ideas in 2015. Over the last years, it has evolved from a learning provider for IT skills to an infrastructure that can support all non-profit organisations and educational institutions in their work and scaling.

Multilingual, user-oriented and independent of specific sources, the CodeDoor infrastructure can be adapted by organisations worldwide to the needs of their learners. The software solution enables a customised learning experience and can be handled by employees of organisations even if they do not have IT skills themselves.
Currently, students from 15 countries work with the platform – more than 2000 people at the same time. The CodeDoor infrastructure helps users learn to learn – because once you have learned how to learn, the world is open to you. This way, learners can become excellent programmers in under one year, while closing the gap between qualification and career entry. The platform is a project-based, AI-supported learning tool that enables its users to learn to think like coders through methodology, transfer skills and understanding of problems.

Key Findings of WP2

Good Practices on coding in non-formal education contexts

Under Task 2.2 partners conducted desk-based research to identify best practices on non-formal education in coding and also conducted interviews with both IT experts and Job Recruiters/Career Guidance Officers or Recruiting Experts. As a result, several points were concluded.

Firstly, it was concluded that there is a growing demand for coding positions and a low supply of coding professionals in the past years. Also, based on the results of the desk-based research, it was concluded that several best practices exist that employed coding, programming and IT methodologies as means of economic integration of disadvantaged or marginalized populations in the partner countries.

On that point, it was noted that in Cyprus and Portugal most best practices identified aimed at raising IT skills in general while only a few best practices aimed at employing coding specifically as a means of economic integration. On the contrary, in Germany

and Greece, almost all best practices were specifically aimed at enhancing coding skills of vulnerable individuals. Also, it is important to note that most best practices identified were provided for free and required no educational background in coding or programming.

In regards to the target group, from the best practices identified, most trainings and courses aimed at enhancing the skills of refugees, migrants and asylum seekers, while only a few practices were identified aimed at women, girls, the elderly and/or unemployed youth. As seen from the IT interview results, there is a gap or disparity of women in the field of coding and out of the 20 interviewees, 17 were male and 3 were female. Similarly, in the interviews it was agreed that there are very few women in the field which reflects the structure of the countries' society in general and that sometimes women in the field might face discrimination.

Similarly, in regards to the type of courses or trainings that should be provided, most best practices in all partner countries used innovative and non- formal education techniques to increase the skills of vulnerable individuals from lower socio-economic backgrounds. For example, most of the courses or trainings were provided online, giving the learner the opportunity and flexibility to undertake the course or training at any given time.

In addition, based on the best practices and interview results, it is also very important to include other forms of training and services to benefit vulnerable people from lower socio-economic backgrounds and increase their employability. For example, IT experts and Recruiters agreed that soft skill training is also important to include in coding trainings, as well as language trainings, job interview trainings and how to build a CV.

Additionally, another important thing to note based on the best practices analysis that should be adapted to the CodeDoor best practice is that it is crucial to issue a valid

certificate of completion for the courses undertaken which can be used as proof of certain skills when seeking employment.

Lastly, another conclusion that was made was the need to cooperate with local NGOs, municipalities, Universities and organizations in order to promote the trainings and courses and benefit vulnerable individuals.

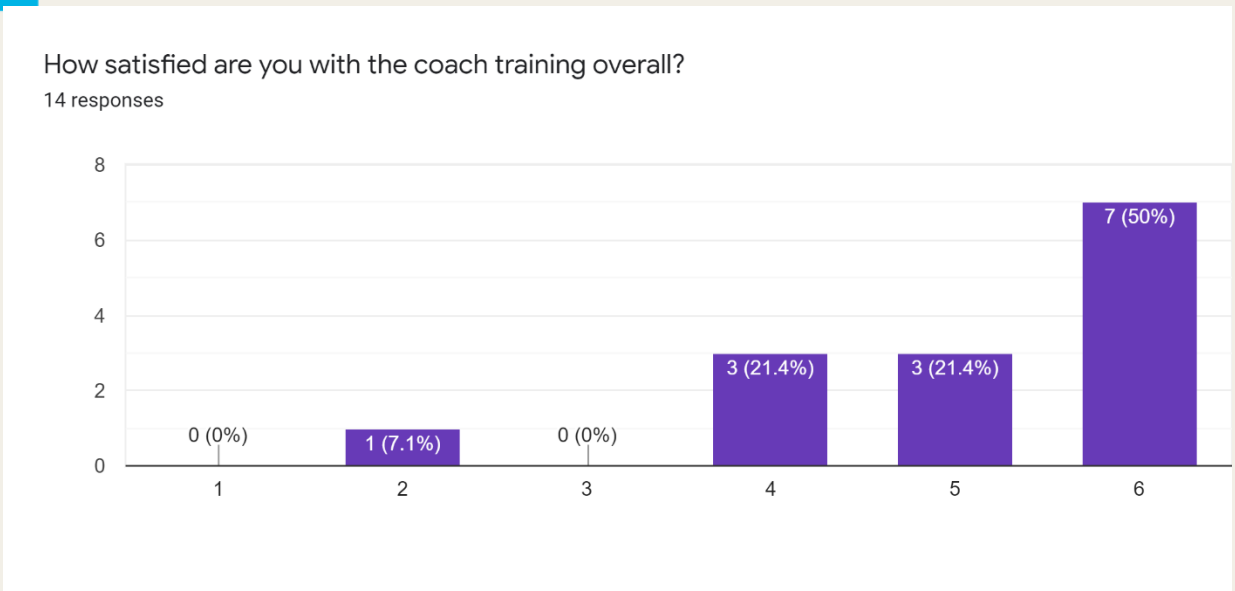
The Coach Training

The Coach Training was conducted on the 23rd, 24th and 25th of June 2021 as part of Task 2.3.1. The Coach Training was a 3-day training activity on the original CodeDoor methodological approach and content (curriculum), delivered by CodeDoor (P4), with the participation of 2 participants per partner organization of the implementation countries (P1,P2,P3,P6,P7,P8).

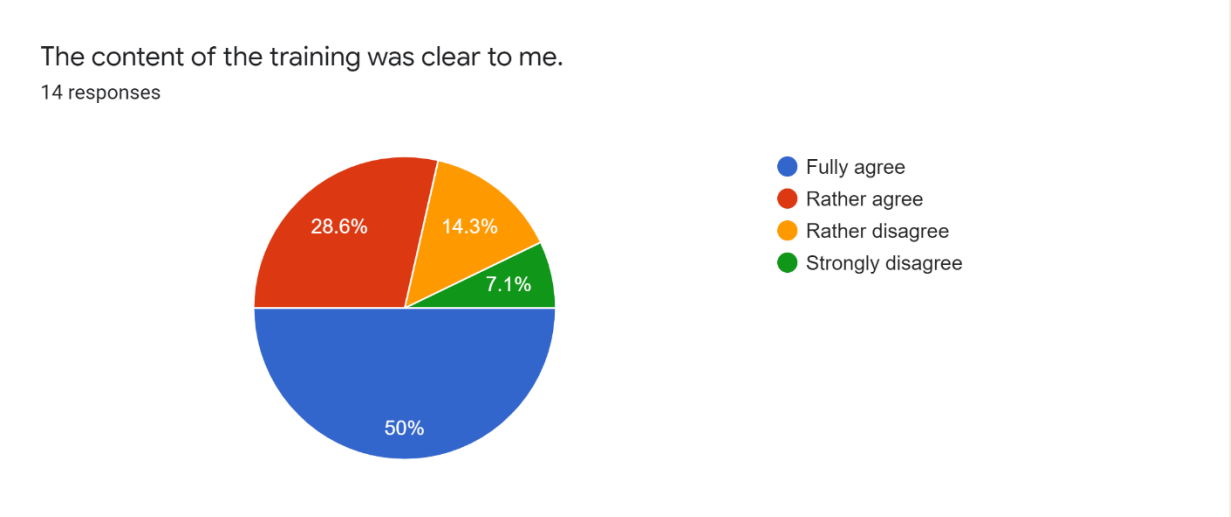
The 12 participants acted as Coaches responsible to train the coaches in the second stage of the pilot testing activities described within WP3. The participants were divided into 2 groups of coding experts and coding beginners and each group was tasked with designing a website using coding. Each day was comprised of a 5-hour non-formal laboratory plus a 3-hour discussion with the aim to decide on the initial transferability plan.

The participants moreover had the chance to access the CodeDoor learning platform, create an account and take part in the CodeDoor basic training on coding.

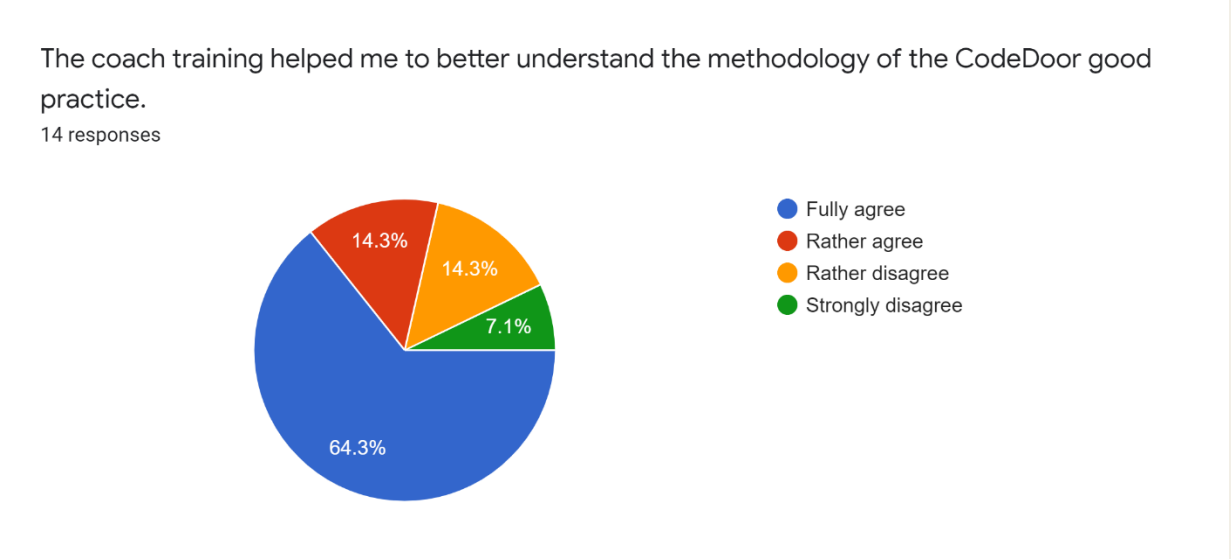
Upon completion of the Coach Training, participants were asked to complete an online questionnaire to ascertain the success of the training, as well as offer their input and recommendations.



Half of the participants stated that they were very satisfied with the training, voting for the highest rating. Also, 6 out of 14 participants were overall satisfied with the Coach Training and only 1 was not very satisfied. Consequently, it can be concluded that the coach training was an overall success.



In a likewise manner, half of the participants stated that they fully agreed that the content of the training was clear to them while only 2 participants rather disagreed and only 1 strongly disagreed. Again, this is a very good result for the Coach Training.



Lastly, it is also concluded that the Coach Training was successful since 64.3% of participants fully agreed that the Coach Training achieved its purpose of letting the participants understand the methodology of the CodeDoor Best Practice.

Initial Transferability Plan

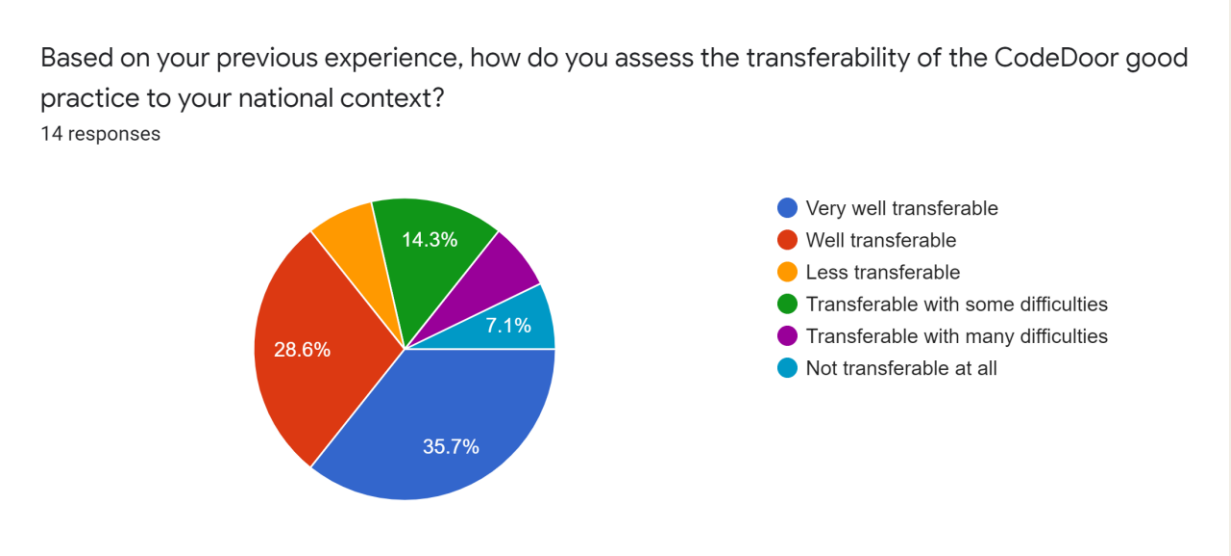
The Initial Transferability Plan was drafted under Task 2.3.2. The Initial Transferability plan concluded that the CodeDoor Best Practice is very easy to use and that a coding training will prove to be very useful and indeed increase employability of trainees in the long term, and offered some recommendations for improvement.

Firstly, it was concluded that it would be helpful to include a short introductory course on what coding is, what coding does and what people can do with coding. This can be in the form of a short video where a tutor or trainer will explain to trainees the basics of coding. In a likewise manner, The Initial Transferability Plan highlighted language barriers in the general CodeDoor training since many uneducated participants may have a very limited or no knowledge of the English language. The Initial Transferability Plan

also concluded that it is very important to keep trainees motivated in order to ensure that they finish the training.

Similarly, it was concluded that people from lower socio-economic backgrounds may not have access to a computer or even to an internet connection in order to follow the CodeDoor training. Similarly, lack of educational background may also be troubling, as the target-group may struggle with using technologies overall and with independent/online learning.

However, it should be pointed out that participants of the Coach Training raised some concerns in regards to the transferability of the CodeDoor best practice. Even though it was generally agreed that it can be transferred and that it will benefit the target group, some participants believed that there may be difficulties in transferring it.



The reason for this according to participants was that it requires a lot of self-commitment from the participants and because it is hard to teach vulnerable individuals.

National Seminars and Round Table Discussions

According to WP2 Output 2.4.2, the Implementation partners in Cyprus, Greece and Portugal had to conduct National Seminars and Round Table Discussions in order to discuss innovative aspects, limitations, challenges and solutions of the CodeDooor best practice. Also, during the National Seminars and Round Table Discussions, participants would have the chance to debate ideas to overcome the challenges of the implementation of CodeDoor, according to the particularities of each country.

In Cyprus, 2 national seminars and 1 round table were held in the month of September 2021. In the National Seminars a total of 30 participants attended including students (the majority of whom were Engineering students), NGO workers and representatives (for example, an NGO representative working with Refugees and another NGO representative working in Social Innovation and Entrepreneurship), and Web Developers and IT professionals. Moreover, participants also included Researchers (most notably a Machine Learning Researcher), Coaches/ Trainers, Youth workers, a Migration Officer, an Electrical Engineer, a Translator, Project Managers, a University representative, a youth worker, and a Graphic Designer. Participants in the Round Table Discussion consisted of an IT/Web Developer, an IT NGO representative, a trainer/educator, a life coach, a career counselor, and a student.

In Greece, the National Seminar and Round Tables took part in October 2021. In regards to the National Seminars, participants were mainly social workers and teachers that are working with vulnerable target groups in the framework of NGOs, teachers that are working in schools, IT experts and recruitment experts. 35 people have participated in the National Seminar in Greece. Regarding the Round Table Discussion, the 6 participants included a University representative, a school representative, a work-place psychologist, a Digital Media Educator, a project manager and an IT expert.

Lastly, in Portugal, there were a total of 35 participants in the National Seminars. Most of the participants were VET teachers, even though the event was also attended by pedagogical directors, SME representatives, public bodies' representatives and training centres' staff. Regarding Round Table Discussions, the 6 participants included SME representatives, Social institution representative, a VET trainer, policy maker and a career counsellor.

Overall, the comments, criticisms and conclusions made in all 3 implementing countries were very similar.

Firstly, in Cyprus it was concluded that the trainings should be addressed towards a broader target group of vulnerable individuals since in Cyprus most trainings are addressed towards refugees, that the training may be too long and this will make it harder for individuals to commit and that independent/ autonomous learning may also make it harder for the target group to follow. Moreover, in Cyprus participants pointed out the difficulty of the language in which the trainings will be provided in since individuals with lower educational backgrounds may not know good English however refuges may not know Greek. Similarly, it was also pointed out how the target group may not have easy access to a computer or to the internet in order to follow the CodeDoor training and that the fact that the training is unpaid will also demotivate participants. Consequently in Cyprus it was suggested that cooperation with schools or educational centres should be established in order to ensure internet and computer access, paid internships should be offered through the CodeDoor training, the duration of the training should be shortened or made more flexible and lastly that tutors or mentors should also offer some kind of psychological support to participants or refer them to a professional counsellor.

In a likewise manner, in Greece the language issue was also raised since many refugees and migrants do not speak either Greek or English and similarly the issue of independent/autonomous learning was also raised. In addition, in Greece it was also

concluded that the duration of the CodeDoor training is too long and that this may demotivate participants. Moreover, in Greece it was concluded during the National Seminars and Round Tables that the selection of participants should be made in a way that will ensure commitment in the training and that individuals from the target group may not have access to a computer or to the internet in order to undertake the CodeDoor training. Furthermore, similarly to Cyprus above, it was concluded that some kind of paid internship should be offered to ensure commitment of participants and that the sustainability of the CodeDoor training should be ensured.

Lastly, in Portugal it was concluded during the National Seminars and Round Table Discussions that the training may be too long and that the language to be used in the training should be simple and practical. Also, in Portugal participants in the National Seminars and Round Table discussions pointed out that having no IT background at all may be very challenging for participants in the CodeDoor Training and that corporations with local authorities should be developed.

Adapting the CodeDoor Best Practice – Recommendations

Based on all the conclusions made during the implementation of WP2, the Implementation Guide proposes the following in adapting the CodeDoor Best Practice in Cyprus, Greece and Portugal:

Language

The issue of the language to be used in each country for the CodeDoor trainings was raised both in the Initial Transferability stage and in the National Seminars and Round Table Discussions. The CodeDoor best practice is currently provided in English, French, Spanish, Japanese and German. In Cyprus and Greece the national language is Greek

and in Portugal the language used is Portuguese. Consequently, in order to successfully implement the CodeDoor best practice in all 3 implementing countries, it is recommended that to begin with, **the CodeDoor training and materials should be translated in Greek and Portuguese using simple and clear language/instructions**. However, the English version of the CodeDoor best practice should also be made available and be an option for learners in Cyprus, Greece and Portugal since a lot of migrants and refugees who are included in the target groups may not be familiar with the national languages.

Selection process

Another key issue that should be addressed in implementing the CodeDoor best practice in Cyprus, Greece and Portugal is the need for **an adequate and effective selection process/recruitment of learners/participants.** This is because it is important to ensure that most of the learners will successfully complete the whole duration of the training without dropping out in contrast to the 50% drop-out rate of the original CodeDoor best practice. Moreover, it is important to select more learners to participate in the training (more than stated in the proposal) in order to ensure that more people complete the training. Also, it is important to carefully select participants that have some knowledge of English or of Greek/ Portuguese since the training will only be provided in those languages. Also, it is important that selected participants have some basic IT knowledge (for example at least to know how to use a computer). Moreover, it is important to recruit participants from various backgrounds, genders and nationalities who fall under the 'vulnerable individuals from lower socio-economic background' target group. Lastly, it would be possible to hold a short interview where participants could explain why the want to follow the training and this will help assess how committed they are in the process.

Tutors

In addition, it has been well established through the implementation of WP2 that the use of tutors is key in the CodeDoor training. In order to ensure commitment and motivation of participants it is suggested that some **face-to-face meetings with he tutors** should be organized throughout the course of the training. This is because this will ensure the self-discipline of the participants who are not used to learn through independent/autonomous learning and also this will be beneficial for participants since the face-to-face meetings will act as an opportunity to discuss other matters. For example, refugees or long-term unemployed individuals may be in a disadvantaged psychological state of mind and may feel overwhelmed and not motivated to continue with the training. Meeting face-to-face with a tutor who listens to them may help them stay motivated and complete the training.

Infrastructure

A key characteristic of the CodeDoor original best practice is the fact that it can be followed online through the CodeDoor platform. However, it has been pointed out that participants from the target group in Cyprus, Greece and Portugal may not have access to a computer or to the internet. For this reason, in implementing the CodeDoor best practice in the implementation countries it is important to **ensure cooperation with local schools, educational centers, municipalities,** etc, where learners could go once or twice a week depending on their schedule to have access to a computer and to the internet so they can proceed with their work. Also, this will increase the motivation and commitment of individuals who are not used to independent/autonomous learning.

Duration

Moreover, when implementing the CodeDoor Best Practice in Cyprus, Greece and Portugal it is important to considered the duration needed to complete the training. It is suggested that taking 12 months to complete the CodeDoor training is a very long time

and this will result in many drop-outs and less participation. As a result it is **suggested to limit the duration of the training or to provide a more flexible time schedule**. For example, an individual could decide to complete the first six months of the training, then work for a bit and then continue for the rest of the training. Others could decide to work on one project for a couple of months and then continue later on with their training.

Internships

In a likewise manner, it is also suggested that in implementing the CodeDoor best practice in Cyprus, Greece and Portugal, it is important to **make arrangements with companies to offer internship programs and most preferably these internship programs to be paid.** It is also important to build a proper monitoring structure of these internships in order to establish the role of the interns and to monitor their progress. This will result in an increase in motivation, ensure that participants will complete the whole training and will also increase the demand of individuals who wish to undertake the CodeDoor training.

Practical Adjustments

Target Group

The target group for the CodeDoor training through the Code4SP Project is defined as *'Youngsters, who belong to displaced populations (migrants, asylum seekers, refugees, minority populations) as well as youngsters who are generally under risk of socio-economic exclusion (dropouts, NEET, etc.)'*

The target group of the CodeDoor training should however be more broad in order to ensure an increase in participation in the training. For that reason, any **'vulnerable individual form a lower socio-economic background'** should be eligible to

participate. For example people with limited education, limited digital literacy, unprivileged women, people living in isolated rural areas with limited training opportunities, unemployed youth, the elderly, prisoners etc should be able to participate in the training.

Certificates

It is important to ensure that all learners will get a **valid certificate** in their national language or English upon completion of the training in order to ensure they can use it for their employability. Also, upon completion of a project through the CodeDoor platform or upon completion of an internship it is important to be issued a certificate as well by the company where possible.

Dissemination and Evaluation

Firstly, it is important to disseminate and advertise the CodeDoor training in Cyprus, Greece and Portugal through schools, universities, NGOs, municipalities, social media etc in order to ensure that more people will know about this opportunity and take part in the training. Also, it is important that each year participants who have completed the training would provide their input and evaluation based on their experience in order to constantly improve the best practice in the implementation countries.

Conclusions

Throughout the implementation of WP2 it has been showed that adapting the CodeDoor best practice in Cyprus, Greece and Portugal will indeed be beneficial for the target group in increasing their employability in the field of coding/programming. It has also be shown that there exists great demand for coding professionals but a low supply. Also, it was concluded that not a lot of coding training opportunities exist and than people with no previous IT background could be trained in coding.

As a result, based on all the results of WP2, after making the necessary amendments to the CodeDoor best practice and implementing it in the three countries, the aims of the Code4SP project will be met.