GAME laboratory

Co-funded by the Erasmus+ Programme of the European Union

Guide for creating games dedicated to youth workers along with the recommendations

Engaging NEET Youth THROUGH THE MEDIUM OF GAMES

CITIZENS IN POWER

PRAXIS EUROPE

cazalla INTERCULTURAL

Fundacja Centrum Aktywności Twórczej

Content

1. Analysis of early education system for the development of competencies and use of games, and analysis of the use of games in education.

1.1 Introduction: why we talk about use of game in early education.

Nowadays we hear concepts like "gamification" or "game based learning" and it may seem that is something fancy and new, an innovation to foster motivation in our young people. This is because we tend to understand "play" as the opposite of "learning". When we were kids we were told to stop playing and start doing our homework, start studying for our exams, games were perceived sometimes as a waste of time, that prevent children from investing efforts in what was really important: learning.

However, the natural way of learning is nothing but playing: it is during playful activities, where children understand the rules of the society and its interactions, where they socialize and they learn how to deal with failure, how to get the most of their resources and to take decisions. In order to be part of the society, kids must play games. As Yuval Noah Harari pointed out on his book *Sapiens*, "The game is the way mammals have to learn social behaviour".

We are now rediscovering our natural way of learn, we understand that emotions play an important role in learning and we recover the importance of this "kid stuff". We understand now that knowledge is useless if it is not accompanied by skills, by attitudes, and specially by emotions, that came from experience.

Even if in our reallities gamification is not a trend in education, we still can see elements of games in early education stages. Children need games in order to learn (that we know). All humans need games in order to learn (that's what we are discovering).

To learn more about importance of games in human's history you can read the book *Homo Ludens* by Johan Huizinga, where he link the human culture with the act of playing games.

1.2 Use of games in early education: kindergarden and primary school.

Context in UK:

Using games in early education is an important avenue in helping young people to become equipped to deal with the environment they live in (Hansen, 2013). The general opportunity and ability to play is a common point which young children and people naturally often adhere to. The idea and understanding that play is an important concept in the development of a child is not a new one. In ancient Greek thought Plato discussed in the 'Republic' (Waterfield, 1993) ideas around not forcing children to learn rather allowing them to explore in order to develop through play. This sentiment has moved into the contemporary society and policy. This idea of play was enshrined in the United Nations Convention On The Rights Of The Child (1989).

A definition of play: (ATL, 2016)

"Play is freely chosen by, and under the control of the child. The child decides how to play, how long to sustain the pay, what the play is about, and who to play with. There are many forms of play, but it is usually highly creative, open- ended and imaginative. It requires active engagement of the players and can be deeply satisfying".

The use of games in British early education in nurseries for toddlers and primary school is interwoven with pedagogy i.e. science of teaching. Pedagogy revolves around being able to conceptualise how young people and children learn & progress as well as understanding the various avenues that can enhance the learning processes (Light, 2012). This is also related to the values we wish to promote as a society and how knowledge exchange and theory impact this.

According to the Department For Children, School And Families (2009) they have mentioned a couple of factors which are related to early years provision. The paper discusses the best conditions for the learning development of children which are:

1) child-initiated play, actively supported by adults
2) focused learning, with adults guiding the learning through playful, rich experiential activities.

In early years education in the UK play is initiated through games for example one game might be playing with sand, others include; imaginary role play, singing games, clapping games, fun games, water play, dough play, construction play & toys etc (Turnbull, 2017).

Game play is an important part in childhood development. Areas of development can revolve around cognitive abilities as well as other key progression such as language capability and development.

Context in Poland:

It should be a concern for educators and employers to make the learning process fun, because then everyone, regardless of their age, is more likely to get involved in it[1]. A good example are educational games, including board games, which are increasingly becoming one of the tools of early school education. Teachers in Poland use various games, according to their resources and capabilities (financial, human resources). They themselves are looking for solutions that can make the teaching process and the learning process more attractive. Games used from an early age shape the psyche of young people, influence the way they perceive reality, construct certain information. Children like to tell stories about their favourite characters, they are more eager to solve puzzles, they are creative, open and communicative. In Poland, public schools and kindergartens have a fixed operating budget, often not sufficient to supplement educational equipment and tools (e.g. board games). Parents or NGOs come to help. However, a great deal depends on the attitudes of teachers, educators and educators themselves, who are responsible for the education process of the youngest children. Educational games used at an early stage of education certainly improve the quality of education, supporting above all the process of learning, remembering and developing interpersonal and social competences.

The whole stream of educational games assumes that games have a lasting impact on human psyche in the sense that they allow them to assimilate new information, understand complex processes or develop systemic, strategic and logical thinking. The development of educational games for teenagers and adults is still a novelty[2].

It is worth mentioning here the story of Tadeusz Henryk Polański (retired teacher of mathematics), who invented the Gdańsk Educational Experiment and is still looking for funding to implement it in schools. He created prototypes of logical games that teach and encourage arithmetic in an accessible way, while shaping different skills. He believes that board games are better than computer games because they develop children intellectually and teach them logical thinking[3].

[1] *http://grywalizacja24.pl/grywalizacja-w-edukacji/*
[2] *https://antyweb.pl/stare-kadry-musza-wymrzec-czyli-grywalizacja-w-edukacji-game-indystry-trends-2012/*
[3] *http://www.dziennikbaltycki.pl/artykul/501269,gdanski-eksperyment-edukacyjny-gry-planszowe-w-szkolach,id,t.html*

Research conducted by the Polish Educational Research Institute [IBE] shows that the choice of computer games is correlated with intelligence, literacy and numeracy. Different games have a different potential to affect children's development. This also applies to board games. IBE researchers looked at the presence of games in the lives of students in two studies. One was attended by students graduating from the 5th grade of primary school (School Efficiency Conditions, 2013) and the other by 6- and 7-year-old children (School Start Skills Test, two measurements: 2012 and 2013). (...) The preliminary results of these qualitative studies indicated that some games are developing children. However, one should be careful in promoting the hypothesis that games bring only positive effects. *Calculations made in the study show that the most negative correlations are between playing in the record-breaking popularity of Minecrafts. Students playing this game may achieve lower grades on average in mathematics, Polish language, English, and computer science.They may also have more unexcused absences from school*.[4] Children aged 6-7 years also use online games in computer browsers. Among the most popular were Minecraft, Lego, FIFA, Barbie, Farmville, Mario and Sims. Researchers stressed that board games are positively related to cognitive competences. They develop work memory and intelligence. Playing them can also develop social competences. They have an indirect impact on school performance as they allow the child to function better in school.

For children with special needs, board games are one of their favourite activities. Educators and authors of educational tools (available at the link, in a footnote) point *out that children compete within the framework of specific rules and at the same time acquire content that we want them to remember*. In addition, they have the opportunity to test themselves, their knowledge and their skills. In their opinion, it is also important to develop their own games and methodologies, adapted to the skills and abilities of students with intellectual disabilities.[5]

Having read the available literature, articles and information from teachers, the experts conclude that there is an increased interest in and acceptance of the use of games. Board games are becoming more and more popular among children and youth (they are not only available in kindergartens or school dayrooms) and they are being used more and more by teachers/educators/educators/youth workers during lessons and extracurricular activities, appreciating their educational and social values. Board games (apart from providing entertainment and filling leisure time) are one of the tools of transferring knowledge, practicing specific skills or solving difficulties in a peer group.

[4] *http://www.ibe.edu.pl/pl/media-prasa/aktualnosci-prasowe/418-jakie-gry-wybieraja-uczniowie-i-z-czym-sie-to-wiaze*
[5] *https://www.edunews.pl/narzedzia-i-projekty/edutainment/3671-gry-planszowe-w-edukacji-dzieci-ze-spe*

Context in Cyprus:

A) Kindergarten:

In the kindergarten program -and depending on the child's age range- the play is being categorized in free and structured play.

Free Game.

Based on the frameworks set by the national education system framework -which is formulated every year by the National Ministry of Education and Culture and which has to be followed by all the -approved by the competent Ministry- private and public kindergartens and schools, during the time that a ***free play*** is being conducted, the kindergarten is expected to offer opportunities for the child to engage in ***socio-dramatic, fantastic-symbolic, creative, kinetic, exploratory-experimental play and play with pedagogical material***. Accordingly, during the free play, the nursery teacher observes, organizes, mediates in order for the child to ***remain active and*** keep playing, participates by playing with children in contexts and themesscenarios which are primarily been defined by the child itself. Hence, in this case the child maintains the freedom to take personal decisions in terms of whatkind of games and with whom classmates he would like to deal with by making usage of the objects of his preference, whilst simultaneously obeying to both the rules of the class and the timelines. The aim is for the child to act through differentobjects-games, to use them according to his level ***and*** skills, to create scenarios, to socialize, tointerrogate, to take roles, to improvise, to have fun, to make observations, to explore, to experiment, a process that will ultimately make him capable of acquiring a prolific personality.

In Table 1, some examples are presented of social-drama and fantasy-symbolic play.

It is extremely important to highlight the fact that there are differences (variations) for children falling in the age range 3-6, in terms of a child's skills and competences, therefore affecting both the teacher's options and given emphasis to some kinds of play. For this reason it is clarified that for children of 3 years, for instance, it is deemed more appropriate to emphasize on the creation of a content in which the child comes in contact with a play enriched with pedagogic material (e.g. puzzles, beads, dominos, match play, etc.) which enhances the child's kinetic skills, whereas the dramatic play enhances the emerging abilities of the child related to role-play activity.

Table 1: An example of created context related to socio-drama and fantastic-symbolic play.

Socio-dramatic Play	**Fantastic-Symbolic Play**
• Bedroom • Supermarket • Bakery • Pharmacy • Restaurant • Dental Clinic • Flower Shop • Café • Play ground	• Forest • Castle • Pirate Ship • Attic/loft • Spacecraft • The house of magic doors • Story Title: The green wolf

'OnlineSource: Translation from Greek https://www.ucy.ac.cy/nursery/documents/Analytika_programmata/analytiko_programma_ypp.pdf'

Structured Play.

What differentiates the structure from free play is that the structured play constitutes -with a direct and predetermined way- a part of a wider evolutionary framework activities. The nursery governess is involved in children's play, in order to provide guidance to the child, thus enhancing and deepening the process, in a way that the past experiences of the child are being interlinked with the creation of new ones, intertwined with the specific objectives of the structured activity or project evolutionary activities.

Finally, the structured play offers -on the one hand- the opportunity for recapitulation and reflection on what has been occurred or observed during the conduction of the structured activities and play and, on the other hand, the context for further deepening on the educational objectives, by both the kindergarten and the child.

Both free and structured play can be built through the usage of specially-designed 'learning centers' which form the framework- scenery of a particular play. Any kind of furniture or other materials of which a 'learning center' is being composed should be specially-selected to gradually lead the child to absorb the relevant knowledge, as this has been defined and indicated through the preset educational objectives.

Context in Spain:

There are no official figures for the schools that have incorporated the board games into the classroom but teachers are beginning to show interest in this educational tool. Also the public institutions, which have begun to offer courses in teaching centres and universities. Núria Guzmán Sanjaume, a psychologist and trainer in neuroeducation and play at Afim21, has seen it. Since 2015 she has carried out training courses related to play, justified in the field of Neuroscience and Neuropsychology, in more than 100 educational centres in the provinces of Madrid, Castilla-León, Barcelona, Almería, Granada and Málaga. Today, together with Manu Sánchez, he manages the Telegram Juego group in the classroom, which has more than 500 teachers attracted by this educational resource and receives countless emails from teachers, not only from Spain but also from Latin America.

According to Núria Guzmán, "the most common thing is that teachers use games on a regular basis" and schools that implement them as a project of the school are still exceptional. As an example, the case of the implementation of the board game in the classroom in four schools in Almeria: more than 600 students accessed this resource during one hour a week during school hours, and the project became a finalist for Social Innovation in the awards given by La Caixa every year. "The students are very receptive to this type of initiative, show interest and curiosity, and the teaching staff connect more easily with them, generating an ideal environment for learning.

Board games are an educational tool that can bring many benefits not only at the curriculum level but also at the physical and social levels. We use classroom games as a resource to make the teaching-learning process more playful, but also to improve the key competences of our students. Not only can we learn mathematics or geography by playing with a game, but we can also develop in a more playful and creative way aspects that are as little treated or difficult to deal with completely in the classroom as language skills or learning to learn.

Both Sanchez and Guzman argue that the school should educate as well as teach and this is where the inclusion of the game can be interesting. "Games have a lot to do with the key competencies that need to be acquired, but they also allow you to set goals, negotiate, make decisions, plan, organize.... They are complex cognitive processes that we use later in our working lives, making them an ideal context that prepares them for their professional future. The students who play become more flexible, with more critical and analytical skills.

Although the perception is that the ECD/65/2015 education order of 21 January has suppressed play in many ways, the reality for Manu Sánchez is that the order gives teachers the freedom to "work with active methodologies that encourage motivation to learn in students". This is where Game Based Learning (ABJ) comes in, a methodology that the

teacher Manu Sánchez recommends to introduce in a step-by-step way: "The easiest and most direct way is to use them when we want to work on very concrete contents. For example, we can take a deck of cards to work on the concept of number, mental calculation, numbering... or some dice with drawings to develop literary creativity in a more playful way. Once we have some experience in using classroom games we can use them to develop key competencies as well as content. We can use the game as a socializing agent or in a final step as the core of a Project Based Learning.

1.3 National Analysis: Education system framework for use of games.

Context in UK:

In the UK there are a range of systems in place which relate to early years education and these frameworks are designed to provide the best opportunities for young people and children to succeed in their future endeavours.

According to an Ofstead (2015) report in 2014, 40% of children did not have the right skills needed to be adequately developed by the age of five. The report went on to discuss a range of issues such as:

1) Speech, language and communication are crucial factors in the learning processes of young people.
2) Disadvantaged children are better positioned when they spend more time with adults.

Play is an important aspect of educational system frameworks. Play through the medium of games allows children to self reflect, learn about their peers and experience their environments in a meaningful way. Within surroundings that promote positive learning children have the best opportunity to progress and develop.

Over two decades ago in England the white paper Excellence in Schools (1997) paved the way for the development of early years education and this was a point in time where early years education was recognised as something very important in regards to the life opportunities children would have. This would affect the systems and frameworks used within early year's education.

Therefore the education frameworks also include the use of play and games. Some key points that need to be present for the successful engagement and development of children and young people may include:

- Having the opportunity to use a diverse range of materials relative to the target group.
- The avenue to adjust and rearrange materials according to the needs of the target group.
- The importance of using language and the ability to incorporate a range of quality vocabulary.
- The chance for those in early education to have the ability to make choices.

Context in Poland:

Since the beginning of 2017, an education reform has been underway with the main objective of better preparing school-leavers for individual development and a modern labour market, for which a solid foundation for general education is needed.

Full-time compulsory education lasts for 10 years and comprises the last year of pre-school education, 6 years of primary school education and 3 years of lower secondary school education. Starting 2017 a new structure of school education is being implemented in which full-time compulsory education will last for 9 years (the last year of pre-school education and 8 years of primary school education).

In the Polish education system full-time compulsory education and part-time COMPULSORY EDUCATION are defined. Full-time compulsory education (obligation to attend primary and lower secondary school – old structure, and primary school – new structure) applies to pupils aged 7-16 years (7-15 in the new structure) while part-time compulsory education (obligation to be in education) concerns pupils aged 16-18 (15-18 in the new structure) and it may take place either in school settings (a student attends an upper secondary school) or in non-school settings (e.g. a student follows vocational training offered by employers)[6].

Among the key elements of the education system we can also distinguish[7]:

- an obligation for 6-year-olds to attend 1 year of pre-primary education in order to acquire basic skills before they start school at 7 (this education, as it is the case for the school education, is financed from the general subvention from the State budget),

[6] *Krótka informacja o polskim systemie edukacji 2017/18, http://eurydice.org.pl/system-edukacji-w-polsce/, THE POLISH EDUCATION SYSTEM IN BRIEF 2017/18*
[7] *ibidem*

- strengthening secondary education – both general and vocational – through the extension of secondary programmes by 1 year,
- introduction of 3-year sectoral VET learning (to obtain a professional qualification) with a possibility to continue education for further 2 years at the second stage of sectoral VET school in order to upgrade qualifications and to prepare for the matriculation exam,
- promotion of dual vocational training in cooperation with the business sector.

LOWER SECONDARY EDUCATION[8]

Old structure : *3-year* gimnazjum *(lower secondary school) for students aged 13-16 is another stage of compulsory education. At the end of it pupils take a compulsory external exam and its results influence admission to upper secondary schools.*

New structure: Starting in 2017 the 3-year *gimnazjum* (lower secondary school) will be phased out. Pupils graduating from the 6t grade of primary school become pupils of grade 7 in a new 8-year primary school. The compulsory external exam will take place in grade 8 of primary school and its results will influence admission to secondary schools.

UPPER SECONDARY EDUCATION[9]

The vast majority of junior high school graduates continue their education in general secondary schools or vocational schools, although it is not obligatory (students are only subject to compulsory education). This stage includes learning in the following types of schools:

- 3-year general upper secondary school (*liceum ogólnokształcące*),
- 4-year technical upper secondary school (*technikum*),
- 3-year basic vocational school (*zasadnicza szkoła zawodowa*).

Pupils attend upper secondary schools at the age of 16-19 (16-20 years in case of the technical upper secondary school).

POST-SECONDARY NON-TERTIARY EDUCATION[10]

Post-secondary education is considered to be a part of secondary education. Post-secondary schools (*szkoła policealna*) are intended for graduates of general upper secondary schools who wish to obtain a diploma confirming their vocational qualifications.

[8] *ibidem*
[9] *ibidem*
[10] *ibidem*

The schools offer courses lasting from 1 to 2.5 years. The students of post-secondary schools and students of basic vocational schools and technical upper secondary schools take vocational exams of the same type. Post-secondary schools will continue their functioning within the new structure of school education.

HIGHER EDUCATION

There are two types of Higher Education Institutions:

- university-type (*uczelnia akademicka*),
- non-university-type (*uczelnia zawodowa*).

They both offer first- and second-cycle programmes as well as long-cycle Master's degree programmes while only university-type HEIs can offer third-cycle programmes (doctoral studies) and are authorized to award doctoral degrees. Studies are organized in the form of full-time (*studia stacjonarne*) or part-time (*studia niestacjonarne*) programmes.

ADULT EDUCATION[11]

Adult education is open to adults who wish to complete school education on primary and secondary level or acquire new vocational qualifications and skills for professional or personal reasons.

It is organised, in school- and non-school settings, by:

- continuing education institutions,
- practical training institutions,
- in-service training centres,
- HEIs as non-degree postgraduate programmes.

Games are still not being used properly in teaching. Games in Polish education are constantly developing in order to meet western standards. The author of the article[12] assumes that all games (sports, card, Internet, board and other) have several elements in common: a clear goal, specific rules, a fixed feedback system and voluntary character. Almost always, the player makes an effort to overcome the obstacles and win a specific prize. The same is true for education. Ready-made games (ordinary commercial games or specially prepared educational games) are used as a tool in the same way as any other educational tool - a textbook, exercises, lecture, presentation, that is, to pose a problem, a task or to explain it, and also to explain a phenomenon.[13]

[11] *ibidem*
[12] *http://grywalizacja24.pl/grywalizacja-w-edukacji/*
[13] *ibidem*

The advantages of using games in education are therefore increasingly being discussed, with all the methods involving the attention of students being priced, who are increasingly finding it difficult to concentrate on a single task and are changing their interests ever more quickly, becoming interdisciplinary natives in the world of new technologies and new media.[14]

Context in Cyprus:

Despite the fact that the Cypriot Educational Framework for nursery schools is being centralized on the introduction of structured or free play, the research conducted under the context of the current project (Qualitative Method of Research used: Interview) provides an indication of limited use of games/ play that are incorporated within the official schedules of primary schools. Although the structured or free play does not appear to be particularly promoted in the way it has been presented in the previous section (I), a concerted effort has been made by the competent part of the ministry in order for the pupils' school books to contain exercises that promote a more playful way of learning. For example, in many of the pupil's course books an ' 'investigation part' has been added, which promotes experimentation and interrogation, whilst in parallel recalls many of the previous experiences and knowledge of the student in order to reach the new knowledge. Additionally, the course books on mathematics, for instance, approach the scientific concepts through creative activities that they put the student to the process of observing, sketching, colouring or prying and creating shapes, an educational context which converts the learning process into a pleasant and creative process.

Despite that some characteristics of a guided form of play could be detected -to some extent- within the official educational contexts of primary schools, one could argue that the play/game cannot be detected in the genuine/ original meaning of the term 'play' or 'game'. More particularly, such activities incorporated within the official curricula of primary schools have been characterized as 'playful' as they borrow some of the features of a real game but they could not be considered as a 'play' or a 'game', in the true sense of the term. This argument stems from the definition of the game, according to which the main components of a game are: rules, achievements, challenge and interaction. Although, the playful activities incorporated in the school books tend to lack the component of interaction of the student with an other person or even with a pc, therefore being characterized as 'playful' and not as a 'game'.

[14] *https://www.edunews.pl/nowoczesna-edukacja/innowacje-w-edukacji/1962-jak-wykorzystac-gry-w-edukacji*

Based on such rationale, we have asked the interviewees to answer the question: 'What are the obstacles of incorporating structured or unstructured (free) play/ games with a focus on pupils' interaction, as an educational tool, incorporated in the daily routine/ official curricula of primary schools;'. To this question, the majority of the teachers-interviewees gave as an answer -and with no doubts- that the lack of time in combination with the huge amount of curriculum to be covered, prevents the teacher from incorporating this method on a more frequent basis. Additionally, half of the interviewees also mentioned that such incorporation 'could provoke a situation of 'hustle and bustle' in the classroom, accompanied by behaviours that it is rather difficult for the teacher to control, especially in a classroom with a large number of students.

In any way, it is much more easier to encounter playful activities, or even play/games in the duration of courses that are being considered as secondary or complementary ones, such as physical education and sports.

Additionally, specially designed games/ board games are frequently been designed for school education, within the context of educational European programs, such as Erasmus+; strategic partnerships for school education. One example taken from a similar European program, suitable for primary school pupils, is going to be presented within the next paragraph.

Context in Spain:

The Order ECD/65/2015 on key competences is a standard recently published by the Spanish Ministry of Education, Culture and Sport on the relationship between competences and the contents and evaluation criteria of Primary, Secondary and Baccalaureate Education.

The ECD/65/2015 Order on competences begins with a historical overview of the different European and world institutions that have insisted on the need for citizens to acquire key competences as an indispensable condition for achieving full personal, social and professional development.

The ECD/65/2015 Order on competencies aims to describe the relationship between competencies and the contents and evaluation criteria in the stages of Primary, Secondary and High School.

One of the most interesting sections of Order ECD/65/2015 on competencies is ANNEX I, which describes each of the competencies. It is a very technical, dense, elaborate description

with a high level of abstraction. From a technical and conceptual point of view, it is an impeccable synthesis of each of the skills, although for them to be assimilated and understood, more than a profound reading is necessary.

The ECD/65/2015 order thus becomes the framework of the Spanish educational system where board games could be included as a tool for the acquisition of transversal and basic competences and although it has suppressed play in many ways, the reality is that this order gives teachers the freedom to work with active methodologies that favour the motivation of students to learn, in particular Game Based Learning (GBL).

1.4 Examples of use of games in education.

In the UK:

Within educational systems worldwide games are used as a means of teaching and helping children grow and enhance their learning as well as their knowledge. In the UK early years education use an online game called Gingerbread Man Counting Game (M.G, 2014).

It is a free online maths game which uses digital images and counting as a means of teaching mathematics to children experiencing early year's education. The game is useful for these young children as it is very easy and simple and can help them develop their numerical skills and understanding.

Another example of games used in education in the UK is Scrabble. Primary school children use board games such as this. Scrabble is a word based game which can support the development of young children. This type of board game is useful in helping develop social skills as multiple players can play at once. Also children can improve their concentration and cognitive abilities as well as language skills (Gray, 2013).

In Poland:

Gamification transfers motivational techniques used for years by game designers to the reality around us (e.g. education, the working environment, the activities already mentioned) marketing services). The elements and design techniques known from games concern for example, activities such as setting objectives, encouraging cooperation in the team, gradual

and skill-adapted increase in the level of difficulty of tasks, earning points and badges linked to raising one's status[15].

5 examples of gameplay in the education sector[16]: Khan Academy, Coursera, Brainscape,

Visual Studio Achievements.

Gamification involves the use of game mechanisms that mobilize action, increase commitment, or simply make boring, repetitive and monotonous activities more enjoyable.

Thanks to it we voluntarily undertake tasks, which usually we ourselves are not able to force ourselves to. What we love about games is friends, feedback and fun. Gamification - with badge systems, points systems, levels and scoreboards - has become a hit in the business world. These elements, although attractive and spectacular, do not determine the success of gamification in education. The most important thing here is student autonomy, which means the freedom to decide how they want to achieve their educational goals and to match the level of difficulty of the tasks they face with their abilities and skills. As in games, students need to be familiar with short and long term goals. Clear assessment rules are needed that are understandable to the learner at each stage of the process. Immediate feedback on progress or lack of progress is essential. Only then, as in a good game, can the learner achieve the flow -- that is, the state of absolute commitment to the action[17]. What appears, in terms of gamification in Polish education, is the implementation of game mechanics to teaching processes. We can also identify solutions for game based learning: practice that refers to the use of games to enhance the learning experience. In this case, the game becomes part of the learning process and is designed to teach discreet skills or specific learning outcomes while giving the learner an interesting experience. Game based learning can have fantasy elements and use a variety of exercises to motivate learners to improve their learning outcomes.

Balancing the potential of games in science and education is very important so that the use of games, directly or indirectly, contributes to the development of key competences and to shaping social and entrepreneurial attitudes in children and young people (who are often characterised by different attitudes, social environments, etc.). The use of the game is particularly appreciated compared to other methods and tools in several models of learning outcomes: it enables the development of content-specific skills (content understanding and problem solving) and content-independent skills (cooperation/teamwork, communication and

[15] *https://hrstandard.pl/2014/03/03/gamifikacja-co-to-po-co-jak-dziala/*
[16] *http://grywalizacja24.pl/grywalizacja-w-edukacji-5-najlepszych-przykladow/*
[17] *http://www.nina.gov.pl/baza-wiedzy/gamifikacja-w-edukacji-agnieszka-bilska/*

self-regulation). Learning outcomes include cognitive knowledge and skills, motor skills, learning outcomes [18] and communicative learning outcomes (...).

Games are part of young people's culture and can therefore be used as part of a process to increase NEET's involvement in training and education, including the development of knowledge and skills (NESTA, 2013).

- Games do not only provide entertainment or trust in your free time. Their use in non formal, but also formal, education can help to achieve positive results, especially in emotional and intellectual development.

- It is particularly important to encourage NEETs to raise awareness, engage in new activities, which can lead to strengthening learning, building positive social models and increasing entrepreneurial attitudes. This will make it possible to encourage people to seek opportunities to fulfil their own aspirations [19].

To sum up: Taking into account attitudes, background, life situation, motivation, experience (positive, negative) and resources of the NEET group, games use an approach based on learning by doing and experiencing. Games create space not only for fun, but also for action, making specific decisions and training skills (including interpersonal, social, entrepreneurial, language skills, used in everyday life and in the working environment). Of course, games are not an exclusive educational tool, but one of the possible pathways for personal and professional development.

CYPRUS: teach mathematics through games.

An example of an educational game in mathematics, suitable for schools students 6-9 years old.

As described within the previous paragraph, specially designed games/ board games are frequently been designed for school education, within the context of educational European programs, such as Erasmus+; Strategic partnerships for school education.

Such example, is the project 'Informath' (Project Number: 2016-1-BE01-KA201-016298), of which the Cypriot NGO 'C.I.P. Citizens In Power' is a member of the consortium. The project, within an on-line platform (http://informath.eu/) and by simultaneously taking into consideration the math curriculum of each of the six participating countries (Belgium, Cyprus, France, Greece, Bulgaria and Portugal), endows the math educators with non-formal

[18] *Wouters, P., van der Spek, E., & van Oostendorp, H. (2009). Current practices in serious game research: a review from a learning outcomes perspective. In T. M. Connolly, M. Stansfield, & E. A. Boyle (Eds.), Games-based learning: Techniques and effective practices*

[19] Result IO1 project Game Laboratory:: *Guide on the use of games as and effective non-formal education method in the socio-economic activation of NEET youth along with the player's dictionary*

educational tools, of which a great majority are specially-developed games- that could be used as complementary activities in the school classrooms. The consortium has developed, in total, more than forty-five thoroughly analysed tools, which are being categorized in three age ranges: 6-9, 10-14, 15-18. All the educational tools are available in all the partner languages plus in English..

An example

Title: ´GAME DOMINO A`

Group age: 4 to 9 years

Duration: 20 minutes approximately

Number of participants: Two to four players

Mathematical concepts involved:
• Logic and reasoning;
• Ordinances of objects;
• Introduction to geometry concepts: straight segment; open curve; closed curve; polygonal line; square and triangle.

General aim objective: Promotion of learning and development of logical rationales with playful methodologies.

Specific objective: Development of specific mathematical concepts, namely: straight segment, open curve, closed curve, polygonal line, square and triangle.

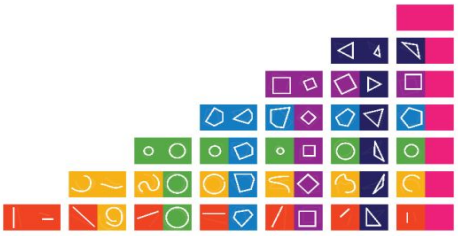
Rules:
Preparation and distribution phase of the material to start the game:

1. Shuffle the 28 pieces face down;
2. Each player removes 7 pieces, and pieces may be left in case they do not have 4 players;
3. The first player to play is the youngest player with a piece of his choice;
4. The next player is the one on the left side, that is, follows the direction of the clockwise direction and so on;
5. The parts must be colour-chained so that the examples can be grouped for the referenced sub-themes;

6. In the event that a player does not have matching pieces, he may pick up a piece that has left at the beginning, or, if there are no pieces, he must pass the next player to the player;
7. The game ends when a player wins, that is, when a player is left with no available tiles, or when the domino is closed: although the players still hold pieces, they have no available play and in this case, the player wins less parts;

Materials and resources:

- 28 rectangular pieces divided into two parts with figures associated with the concepts described:



Media/techniques and methods: The game aims to stimulate the competitiveness between players, along with the development of skills already specified.

Tips of the promoter: The game can be stimulated through the mastery of colours and later through the mathematical domains in the sense of captivating the student for the various mathematical methodologies.

Desirable outcomes and competencies: It is expected that the student has developed:
• Taste for mathematical games;
• The geometry issues involved;
• Reasoning.

Report and questions for evaluation:
At the level of the promoter: With the game, it is expectable that users:
• Encounter a game of lower difficulty
• Develop the desirable skills;
• Recognize the geometric shapes involved in the game.
• What difficulties did you have during this game?
• Is it easy to manipulate the material presented?
• What skills do you think you have developed in the practice of this game?

'Source: Open Educational Source created by 'Informath' project partners'

2. The specificity of gamification in youth work, in particular NEET youth 15-17, and the one with fewer opportunities, in the context of the most desirable attitudes to reinforce and specific deficits and development areas.

2.1 Two good practices of gamification in youth work with NEETs.

Good practices in UK:

With the global crash and economic downturn in 2008 economic difficulties appeared across Europe and other parts of the world (Hetzel, 2012). Alongside this inevitably austerity measures were implemented by many governments across Europe. These measures were also felt in the United Kingdom particularly as the coalition government was formed in 2010 with a partnership consisting of the Conservative and Liberal democrat parties. Youth services were subsequently decimated and funding cuts were implemented. Therefore dealing with NEET (not in education or employment) youth became more difficult due to the lack of resources and reduction in services.

Referring to two good examples of good practices in youth work with NEET's we can observe the project, Youth Arts Programme which was run in Northern Ireland in 2011 cited in a Big Lottery funded paper. The programme initiated contact and undertook sessions with young people from schools in the West Belfast part of Northern Ireland. Many of these young individuals were living on the fringes of society and in poverty. This project engaged these individuals with innovate engagement techniques. Two good practices that were present in this project were inclusiveness and empowerment. The project empowered young people to develop and deliver a festival and the inclusive methodology undertaken allowed young marginalised people to actively take part in activities and participate in social change.

Good practices in Cyprus:

Project BaSE.

"The Consortium".

The project was created by a group of four organizations (two private entities and two universities) in Cyprus and Greece, who established a Strategic Partnership. Namely, these organizations are MC Institute of Public Relations (MCIPR) – the "Coordinator of the project, Kalys Solutions Ltd (KS), the Department of Computer Science of the University of Cyprus

(UOC) and the University of Thessaly (UOT). Additionally, as participating associate partners were, the Organization of Business and Professional Women of Nicosia (BPW) and the Young Organization of Business and Professional Women of Cyprus (YBPW), which were involved in the development of certain outputs and in ensuring the project's quality and durability' [Online Source: http://baseproject.eu/about-us/].

"Activities/Products".

Project BaSE was scheduled to have a term of 20 months, which started as of March 2015 and ending in October 2016. Throughout this period the Partnership carried out on the following tasks:

- Development, implementation and analysis of relevant questionnaires in order to figure out the training needs for potential and / or established entrepreneurs.
- Development of ICT tools designed for the target group of youth in order to help them establish and grow their own business. The main informative ICT tool was a website which contained educational sources and training materials on entrepreneurship. The main fields of training materials identified were: business set up and functioning, business operation, identification of services or products offered recruitment and training of personnel, promotion, networking, crisis management and other important elements of the business cycle.

Additionally, an innovative online simulation game for virtual practicum training of potential or established entrepreneurs has been created. In the simulation game, users

were invited to take the appropriate course of actions in order to deal with a number of real-business-life challenges and problems which they potentially came across in their effort to create and run their own business. The virtual environment allowed the users to 'learn-by-doing', thus developed their personal empowerment and entrepreneurial skills' [Online Source: http://baseproject.eu/about-us/].

FEFE.

"The Consortium".

The consortium consists of six European organizations, ASTON UNIVERSITY and ELearning Studios LTD from UK, CARDET from Cyprus, Best from Austria and Hi Iberia and University of Barcelona from Spain.

Activities/Products.

'FEFE is a cross-sectoral co-operation which will develop the financial literacy and entrepreneurial mind-sets of learners across VET and Higher Education (HE) contexts. The central feature of the project is the development and implementation of a digital 'serious game' (a game the primary purpose of which is learning/training) which will be freely available as an Online Education Resource (OER) accessible via mobile devices.

Through FEFE, learners will develop key skills required of entrepreneurs: the ability to make better financial decisions, be better able to understand and access alternative sources of finance and be more willing to trade across international boundaries. Developing these skills will encourage more learners to become entrepreneurs and will enable them to grow their own enterprises more effectively. These skills will also make learners more employable generally and will enable them to contribute more effectively to the growth of any enterprise in which they are employed. FEFE, therefore, will have a positive impact on Europe's economic growth and job creation.

They already have a stable version of the game in the testing phase. This version is available in four languages (English, German, Greek and Spanish).

If you would like to try this new version of the game, please email Matt Davies at Aston Business School at m.l.davies@aston.ac.uk' [Online Source:http://fefeproject.eu/].

3. Mechanisms for transferring behavior induced during the competition, held while playing and possibilities of transferring acquired skills to other areas of life.

3.1 Development of step by step guide based on Kolb's learning style model.

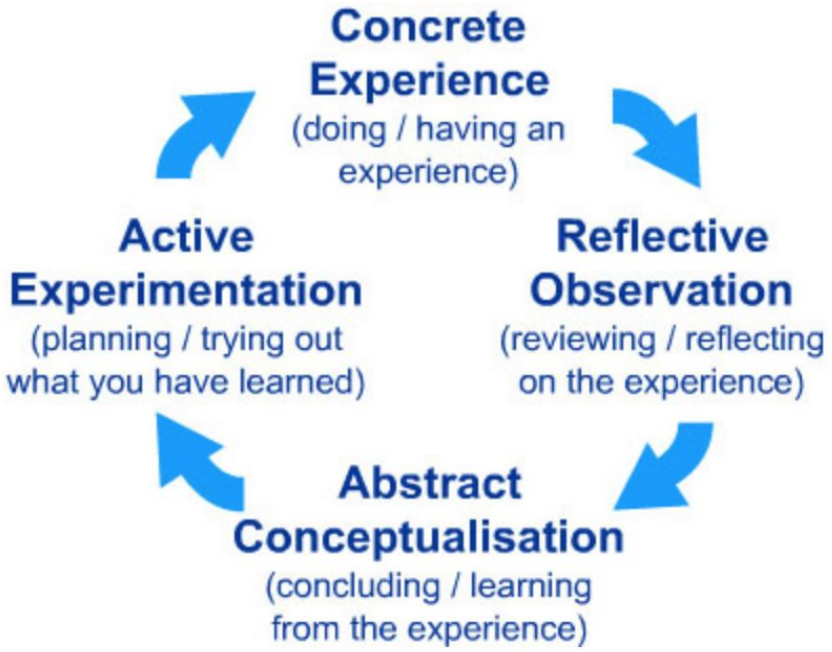
People learn more effectively, and are generally more satisfied when their personal learning styles are taken into account in the design of instruction.

Board games are beginning to rival movies, video-games and television as an entertainment pass time. Many now feel that games constitute an important learning methodology. Modern board games tend to be very complex, often requiring many hours to learn to play, and successful games support players very effectively during this learning phase with detailed rulebooks. Although we may not appreciate what the players are learning, game designers have been very successful at teaching all kinds of individuals how to play their games.

The potential exists to address all three of the previous viewpoints through the use of games for learning, that is, supporting preferred learning styles, encouraging development of other styles, and support for various teaching styles. It cannot be denied that a great deal of learning does happen in games. Many games have a fairly steep learning curve, and so must be well-designed to support players while they learn the game, yet once the player is acclimatized, the gameplay must change. Some styles do seem to be better supported in games than others, and this has implications for how children who play games are "learning to learn".

There are 4 models of commonly accepted learning styles. For this analysis we have selected the Kolb model.

David A. Kolb (with Roger Fry) included four elements in his model: concrete experience, observation and reflection, the formation of abstract concepts and testing in new situations. These four elements form the nodes of a connected circle of experiential learning, with learners able to begin at any point along the circle. Ideally, learners will posses balanced abilities in each of the four areas, but in reality, they tend to polarize towards one of four "poles". These four poles are summarized in the scheme below.



1. **Concrete Experience** - (a new experience or situation is encountered, or a reinterpretation of existing experience).

2. **Reflective Observation of the new experience.** (of particular importance are any inconsistencies between experience and understanding).

3. **Abstract Conceptualization** (reflection gives rise to a new idea, or a modification of an existing abstract concept).

4. **Active Experimentation** (the learner applies them to the world around them to see what results).

Once an individual's style is identified, instruction can be organized to support his or her strengths to give confidence, while still encouraging the further development of the others. In games, the converger can remain unemotional, yet imaginative exploration is encouraged and rewarded. Theoretical models can be devised and tested with minimal risk, yet risks can be taken, and normally the worst that will happen is that the player must start over.

A key aspect of good games is that the player can take up the game in many different ways: as a neutral orchestrator, or as an impassioned participant. Games encourage accommodator abilities of immediate reaction to circumstances and converger abilities of the application of ideas, both within the bounds of the "magic circle" of play because the usual rules and consequences of reality don't apply. Divergers can identify with other players or NPCs (non-playable characters) as though they are people, and assimilators can relate to them using whatever conceptual frameworks they like. Some will lead to greater success within the game than others, but the fact remains, that it is only a game – exploration and experimentation are actively supported in most good games.

3.2 Positive behaviors and skills transferred by games: how to reinforce them.

Game formats vary from country to country and are delivered in variable forms. Some games revolve around digital mediums, there are other formats such as role play, board games, adventure, simulations, cards amongst other forms.

Many of these games are important in helping promote positive behaviors, develop learning and advancing existing skills. One strong benefit of for example educational skills is the cognitive development of an individual. In this case young people can help increase their reasoning ability as well as advance their knowledge (O'Brien, 2003). These types of game also support critical thinking. Critique and critical thinking are important elements of cognitive development as they allow young people to make better and more informed decisions. These skills and positive avenues can be reinforced through repetition and continuous or regular repeat activity. If young people are around environments where games are played which have a positive attribution of cognitive development on a regular basis this consistent contact will allow them to eventually internalize and enhance their cognitive abilities which will allow them to become potentially more effective and productive in society and their daily lives.

Another core benefit of gameplay is the development of social skills. In modern society particularly in the West there is a phenomenon around loneliness affecting older people and even some younger people. Board games are good tools to tackle issues such as these. When

people play board games quite often they will play in a group which is either small or large. Games with multiple players allow interaction, communication, in some games teamwork and competition. All these elements combined help improve social skills particularly for young people. This can be reinforced by introducing board games in non formal environments which will help reinforce social skills that are learnt and developed.

3.3 Negative behaviors transferred by games: what are the negative behaviors that can be transferred by games and how to cope with them.

Game play can play a strong and positive role in many people's lives. However when considering game play further there are also some negative behaviours and traits which can be transferred to individuals. In contemporary society there are millions of young people who play online games. Some of these games are violent and can negatively impact the psyche of youth (Anderson, 2007). Also now there are even digital addiction boot camps and therapy sessions for people who are addicted to their phones, tablets and computers intoxicated by game play. Addiction to online games is becoming a serious and real issue for modern parents and children to deal with. Digital game addiction can be dealt with by rationing time that an individual uses a tech device (Bishop, 2015).

Also some of the digital games are solo player. Therefore these games are played by individuals who may interact virtually with others. This can isolate individuals as fantasy and reality can become blurred. This type of situation also decreases the chance of the development of social skills. A solution to this is to increase the levels of physical activity through joining a gym or sports club. This will allow the individual to meet people face to face and potentially interact on a human level.

4. The method of diagnosing the needs of NEET youth 15-17 in the field of games.

4.1 Development of a questionnaire to be used by the youth worker with their group of NEETs. Learning needs (self-esteem, communication, foreign language…), Job prospects, Elements of motivation, game preferences.

QUESTIONNAIRE diagnosing the needs of young people, taking into account the needs for the use of board games

[A TOOL FOR THE NEET (15-17) YOUTH WORKER]

First name and surname of Youth worker e.g. teacher, pedagogue, educator, trainer, coach	
Registration number of the questionnaire	

General information about the participant	First name	
	Surname	
	Gender	□ female □ male
	Age (the year of birth)	
	Place of accomodation	□ village □ city
	How many siblings have you?	

QUESTIONS ILLUSTRATING THE EDUCATIONAL SITUATION AND NEEDS OF YOUNG PEOPLE	
1. What lessons	**A. do you LIKE to attend?** **.....** **B. do you NOT LIKE to attend?** **.....**
2. To what extent do you know and can speak a foreign language??	Foreign language, which? ..... I assess my language skills: □ bad □ rather bad □ neither good nor bad □ reasonably □ very good
3. Out-of-school activities	**a. What do you like to do in your free time? What activities do you undertake?** .... **b. Do you attend any classes organised by e.g. a library, a community centre, a non-governmental organization (a foundation, an association)?** □ yes □ eno If You don't attend, please write - why? .....
4. Please point on the scale, how often do you play games, e.g. board games, computer games, games available on your phone (applications)?	□ do not play at all □ very rarely □ occasionally □ commonly □ very often

5. What categories of board games are you interested in? You can select a minimum of 3 selected categories. Please justify why.	□ economic □ strategic □ cooperative □ adventure □ wars □ logical □ familiar □ party game □ card game □ riddles □ RPG □ other, which? ..... Why did you make this choice? ....
6. What board game titles do you know?	
7. Do teachers use board games in their lessons?	□ yes □ no if yes, please tick the answer 'X' of your choice: □ often □ occasionally □ very rarely

How to choose suitable game depending of the questionnaire results and competences to be developed.

BOARD GAMES AND SHAPING COMPETENCES AND SKILLS - SELF-ASSESSMENT CARD.

Scale of evaluation:

1 - definitely not, 2 - rather not, 3 - neither yes nor no, 4 - rather yes 5 - definitely yes

or

1 disagree strongly, 2- disagree, 3 - neutral, 4 - agree, 5 - strongly agree

	Please mark the selected answer with an "X" next to the sentence.	**1**	**2**	**3**	**4**	**5**
1.	I am open and communicative.					
2.	I like to work with others in a group.					
3.	I like working alone.					
4.	I am focused and committed to doing the job.					
5.	I learn quickly.					
6.	I'm inventive and I'm looking for solutions by doing a job.					
7.	I feel comfortable when I can follow the instructions in a task.					
8.	I feel comfortable and involved in the task when I have the support of the instructor.					
9.	List 3 of your strengths (Advantage, skill, that is what you know; what you have)					

TO WHAT EXTENT DO GAMES DEVELOP YOUNG PEOPLE'S COMPETENCES/SKILLS?

Please mark the selected grade with an "X" next to it.

Type of competence/skills	**1 very low**	**2 low**	**3 neither low nor high**	**4 rather high**	**5 high**
Ability to understand and adapt to the rules.					
Decision-making skills.					
Analytical skills.					
Memory and concentration.					
Ability to work in a team and cooperate with others.					
Entrepreneurial skills and initiative.					
The ability to think logically.					
Ability to think abstractly.					
Openness to diversity of e.g. people, their opinions.					
Openness to learning.					
Negotiating skills.					
The ability to think independently.					
Ability to formulate and solve problems.					

Written text comprehension.					
Ability to manage time effectively.					

Information for the person completing the questionnaire:

- The purpose of this questionnaire is to collect basic information about the needs of young people aged 15-17 years and to recommend an appropriate educational tool, in the form of a board game, on the basis of the collected data. The catalogue of board games is available in the study: NEET catalogue of good practices in youth work in the context of innovative non-formal education tools. The catalogue of games may be extended with new proposals of games which, according to a person working with young people, fulfil educational functions.

- The teacher, pedagogue, educator, moderator, coach, psychologist, counsellor, etc., having knowledge and competences in the discussed areas and experience in working with young people and/or adults, will have at his disposal the game with elements of training of entrepreneurship and social competences together with instructions, to play independently.

Literature from which the above mentioned competences were derived/inspirations:

- Diagnoza potrzeb młodzieży w środowisku lokalnym, A. Urbanik, A. Gołdys, A.Daszkowska- Kamińska, Warszawa 2010
- Zał. nr 4 Kompetencje Społeczne, Ministerstwo Rodziny Pracy i Polityki Społecznej, https://www.mpips.gov.pl/bip/zamowienia-publiczne/rozpoznanie-rynku/rok-2018/zamowienie-dotyczace-opracowania-koncepcji-systemu-weryfikacji-i-walidacji-kompetencji-spolecznych--w-ramach-programu-mlodziez-solidarna-w-dzialaniu/
- zał. nr 10 Koncepcja systemu weryfikacji i walidacji kompetencji społecznych, Ministerstwo Rodziny Pracy i Polityki Społecznej, https://efs.mrpips.gov.pl/skorzystaj/nabory/konkurs-nr-powr.01.04.00-ip.03-00-00118

Ready for Work - The capabilities young people need to find and keep work – and the programmes proven to help develop these; Impetus – The Private Equity Foundation 2014.

5. Methodology of game development.

5.1 How to gamify a process.

The gaming process of any field is based on the inclusion of traditional game mechanics -whether they be board games or video games- in order to enhance the user's interactivity, build loyalty and smooth out his journey in a traditionally tedious activity. Here are some of the most effective ways to enhance the effectiveness and motivation of a platform.

Definition of objectives. Almost any gaming process must begin by setting the user some goals to be achieved within a defined period of time. Thanks to the technology it is possible to keep track of these objectives, as well as to remember them day by day with a notification on the phone.

Progression. In any board game or videogame it is key that the player feels that, no matter what he does, he is progressing. Progress bars or levels are ways to clearly quantify the user's performance in the activity. From time to time, it may be convenient to present a major leap. For example, a level test in which you demonstrate that you have learned everything you have learned in the last month.

Instant feedback. A major advantage of boar games or video games over traditional education is their ability to immediately value the player. The results, either through a conventional rating or a star system, are displayed immediately after completion of the task. In addition, the inclusion of visual and sound effects enhances the impact of a success or failure more than the classic teacher correction.

Social Gear. The feeling of belonging to the group is one of the most important pieces of any gamified platform. For some people, the competition and overcoming of their peers is the fundamental pillar of their experience. Teamwork in the Hogwarts houses style is another equally effective approach.

Motivating. The inclusion of intrinsic motivators (such as a sense of choice or control) is most effective in satisfying the user. However, extrinsic motivators such as achievements, badges or points are often easier to use; league tables are most effective in promoting healthy competition among users of the same platform.

Narrative. The inclusion of elements of fiction can help in different ways. With a thorough characterization of the characters or an avatar editor, some people can identify with them and feel more connected to the virtual world. The occultation of information or the presentation of

different results according to the performance or choice of the user will arouse the curiosity of more than one.

Time pressure. Pressing the player with time limits can help him to concentrate on the activity. In the long run, the inclusion of events that take place in just a few days will make you want to access the virtual world to see what's going on; the mere fact of having to go in to collect your daily reward is a most effective ruse to build user loyalty.

Although not everything may be applicable to the project you have in mind, with these seven tricks you can get an idea of where to start spinning the gaming process of any activity.

5.2 Game development steps and resources.

1.- **Think about the type of game** you want to create and the age range for which it will be created. Generally the idea comes from a subject that we like and from which we usually have some knowledge, books, other games, etc, with that first idea we can already think about what kind of players to prepare a simple set of basic rules to start with.

2.- **Adapting the idea to paper**. If you have already decided on the theme and types of players, now it remains to be determined what form the idea will take, whether it be in cards, board, dice, etc. You can model your ideas on paper, drawing or writing those first ideas, it does not matter that later you only use part of them, if you have them written you can consult or modify them and in this way they are not lost or forgotten.

3.- **Creating the mechanics and adapting the idea**. Now with the premises of the game clearer is the time to create a basic set of rules to adapt them to our game. Again, the pencil and paper will be our best allies and will allow us to create an appropriate structure and a first draft of the rules and gameplay.

The most **frequently asked questions** are:

- Aim of the game?
- It is a game created to have fun, with playful character, entertainment, etc..
- Who and how does the game win?
- The player who does something in particular wins by Victory Point, by elimination, etc.
- Which elements will be involved?
- The extra components that will be used in the game, counters, counters, counters, markers, etc.

- How many players will there be?
- How long should the game be?
- What choices will the player make, and when will they make them?
- How will the player make these choices?
- How will one player's choice impact the other players?
- How will the players interact with each other?
- Are there any choices that can be made by one player, but not by the others?
- How does the game progress? Is it strictly turn-based, or is it in rounds with phases?
- What actions will the player be able to take?
- How will the outcome of an action be determined?
- What is the player's goal?

4.- **Making a prototype**. With a first set of rules, components and necessary materials, we can now prepare a first prototype of the game, on the Internet there are a lot of royalty-free images that can be used to create the different components. They can also be made with paper and pencil and think about the shape of the components, before printing you can take into account, that it is easier to cut right angles than circumferences, for example.

5.- **Printing the ideas**. Once you have the components, it is time to make a first test print, this should be black and white to make the subsequent corrections either because of the graphic design or the adaptation of rules. Sometimes it happens that we miss something, it is time to rectify a component or adapt the graphic measurements of a component of the prototype.

It's not a bad idea before you start wasting ink, make a few first tests with a handmade design, whenever possible, or reusing the components of other games until you're sure they fit into the game design.

6.- **Testing the Game**. Now is the time to see how the prototype of the game we've created behaves and to take note of the things we overlooked or didn't take into account.

Relatives, friends or playgroups will help us for this task, the doubts they raise and the problems that arise, can result in certain types of corrections that we must address, both at the level of regulation and the realization of the prototype.

8.- **Introducing the game**. Having done the above steps we may feel like introducing the game to the community, if you have chosen the P&P way ("print and play") this should be the cheapest way to reach the printers of the largest possible number of users, if you go over the number of components it is very likely that it will retract from making the game to many users, the same happens if the rules is poorly written, is too long or difficult to understand.

Another common way is to ask for testers (playtesting), send them the game and rules and they test it with their game groups, send you an email with their opinions and questions, from these tests you can get valuable information.

5.3 Workshops on game development with young people.

Activity 1. Spain.

Name of the session	Game development
Target group (age, gender)	Young people
Number of participants	4-30
Duration	1 and ½ hour
Objective of the session	Experience game development process and
Main activities of the session: Please explain the context and objectives of the activities you are planning and in which way they meet the objectives of the project. Ex: Step by step the execution process, tips for delivering the session, guiding and evaluation questions	1. Start explaining how games are very natural when we are children and that we all created new games or rules for a game. Ask participants if they remember any game that they created or house rules they made for an existing game when they where kids (ask for 2 or 3 examples. This is only the introduction of the activity, not its main purpose). Explain that we lost this capacity of creation when we grow up, but now we are going of remember it. 15min 2. Divide the participants in groups (4-5 members each group) 3. Games are very connected with emotions and memories, so ask them to remember a game that they played when they where children and ask them to change this game, adding elements or new rules, so it can be more interesting. 5 min 4. Give them some time to create their games 30 min 5. Finally each group present their game (if the group is too big skip this step) 15 min

	6. Ask them about their feelings, discoveries and "ahá" moments during the activity. 20 min
Methods used	Memories of childhood Group work Games
Needed material and setting requirements	It can be done without any material, but it will be more motivating if they have tokens, dice, paper, paper tape, chalk, etc…
Competences gained by this session	Creativity Team work Understanding of game development process
Recommendations (Which elements of the game worked or didn't work).	

Activity 2 Cyprus.

Name of the session	Do it Yourself
Target group (age, gender)	Young people
Number of participants	4-30
Duration	1 and ½ hour to 3 hours
Objective of the session	To practice the process of developing a game using an online platform that is specialized on the game creation
Main activities of the session: Please explain the context and objectives of the activities you are planning and in which way they meet the objectives of the project. Ex: Step by step the execution process, tips for delivering the session, guiding and evaluation questions	• Prerequisite of this activity: 'Do it Yourself' activity will follow after the implementation of 'Game development' workshop or when participants have a clear idea of the game they would like to develop. • The platform that participants will be using is https://www.thegamecrafter.com/ • The trainer provides info about the platform and divide the participants in groups of 4. Each group have to create one game. The participants with the support of the trainer will follow these steps to make a game. Additional information about the steps can be found here https://help.thegamecrafter.com/article/5-getting-started Step 0: Create a new user account on www.thegamecrafter.com and sign in. You must also have a graphic design program installed. Participants cannot print anything that contains copyrighted or trademarked:

	- Images, Characters, or Logos - Names or Quoted Text <u>Step1:</u> Download Templates from the product catalog of the www.thegamecrafter.com <u>Step 3:</u> Create Your Artwork using a graphic design program <u>Step 4:</u> Save & Export Images that will be used in the game <u>Step 5:</u> Make A New Game Project. Click **Make Games** from the main menu and then **My Games**. <u>Step 6:</u> Upload images of the components <u>Step 7:</u> Set Component Quantities <u>Step 8:</u> Proofing Your Images. View and verify the images before printing. The participants at this stage will know the process of developing a game using a web platform. Therefore, the following steps are optional <u>Step 9</u> Order the First Copy of Your Game from the platform <u>Step 10:</u>

	Self-Publish the Game using the platform Tip: Participants with the support of an experienced trainer can follow the steps of this video. Participants can stop the video after each step is announced and then after the accomplishment of the step the participants can play the video and proceed to the next step https://www.youtube.com/watch?v=aY_WjGK1OZ4
Methods used	Group work, online platform, guidance by an experienced trainer who has developed a game with the use of a web platform that is specialized on the game creation
Needed material and setting requirements	Access to internet, one laptop per working group at least, a graphic design program
Competences gained by this session	• Learn how to create physical games using an online platform • Team work • Understanding the game development process using an online platform. • Participants can obtain technical competences with the use of graphic design program • Participants can develop 'Aesthetic' competences through the procedure of selecting and modifying images that will be used in the game.
Recommendations	The trainer can evaluate the workshop by asking participants the following question Which elements of the process worked or didn't work? What could be improved? Suggestions for improvement?

Activity 2 Cyprus.

Name of the session	Digital interactive learning game
Target group (age, gender)	Young people
Number of participants	4-30
Duration	1 and ½ hour to 3 hours
Objective of the session	To develop and practice a digital game with the use of an application that is specialized on the development of interactive games.
Main activities of the session: Please explain the context and objectives of the activities you are planning and in which way they meet the objectives of the project. Ex: Step by step the execution process, tips for delivering the session, guiding and evaluation questions.	'Digital interactive learning game' can be applied when participants have a clear idea of the game they would like to develop. Therefore, the trainer need to form groups of 4 with participants who share the same interest (example: interest in developing a hunting game, a quiz game, rally, a theme game such a history game, urban expedition etc). Then the trainer provides 30 minutes to participants to create their games. Specifically, the participants need to identify the questions and the answers of the game and subsequently identify the right location to play the game. Additionally, participants can identify the main mission of the game, its visual elements, its challenges and so on. The application that will be used to develop the game is called actionbound https://en.actionbound.com/ . The steps to develop the game: Step 0: Create a new user account on and sign in. https://en.actionbound.com/choose Step 1:

	Create new Bound: Give a title to the bound, Create the online URL of the bound, choose the play mode (single player or multiple player), choose the sequence of stages (fixed or flexible). Then click to create the bound. Step 2: **Add elements to the bound**, for example the user can choose and create any of the following elements: **Stage:**Structure the sections of the game **Quiz:**Let the participants find the right answer in order to earn points and / or get ahead. Set time frame **Mission:**Assign the participants a creative, solvable task for which there is no right or wrong answer. **Find Spot:**Players must go to a specific GPS coordinate in order to earn points and/or move on to the next step **Scan code:**Allow the participants to scan a code to gain points. **Survey:**Create a survey for your Bound players. **Tournament:**Allow members of the team to play against each other. With actionbound the trainer/game developer can check the results, modify easily the game and the settings anytime and anywhere. Examples in practice: https://www.salto-youth.net/tools/toolbox/tool/actionbound-urban-expedition-in-weimar.1921/

	Readymade bounds: https://en.actionbound.com/bounds Tips: The trainer inform participants that they can modify the game (the one crafted during the first phase of this workshop) to fit the 'actionbound' requirements.
Methods used	Group work, online platform, guidance by an experienced trainer who has developed a game with the use of a web platform that is specialized on the game creation
Needed material and setting requirements	One laptop per working group at least, smart phones of the participants, broadband connection
Competences gained by this session	• Participants learn the steps for the development of interactive games using an online platform • Team work • The participants enhance their real-life interactions with the use of smartphones and tablets • Participants can create educational and exciting mobile app-based adventures through the use of extensive game elements and tools such as GPS locations, directions, maps, compass, pictures, videos, quizzes, missions, tournaments and QR codes.
Recommendations	The trainer can evaluate the workshop by asking participants the following questions: - Which elements of the process worked or didn't work? - What could be improved? - Suggestions for improvement?

6. A description of the use of linguistic immersion when using games in non-formal education.

6.1 Using games in a foreign language classroom.

Commercial games that can be used to improve language competences.

- How to choose them.

- How to use them.

Content and Language Integrated Learning (CLIL) - this is a method of integrated subject language learning that is based on simultaneous transmission of new content in the field of the subject taught and communication with a foreign language (learning this language). CILL promotes action-based learning, and the interweaving of content and language is most successful in education. This method is recommended by the European Commission to promote language learning and linguistic diversity. CLIL is designed to enhance language skills and abilities.

This methodology enables individuals to develop and develop interdisciplinary skills that they can use at different times in their lives. Using games as a way of involving NEET young people across Europe, these young people have the opportunity to develop their communication skills through language learning. Games involving CLIL will help to develop positive perspectives and attitudes for young people who benefit from it. Developing effective communication techniques and the ability to form one's own thoughts and views -can help young people who are not in education or employment to set themselves challenges, goals and contribute to positive development (personal, social, professional).

Moreover, the integration of different methods of working with young people in NEET, using a foreign language, prepares them for living in a multicultural and multilingual world.

Combining different skills, including fluent mother tongue and foreign language skills, will also provide young people with better conditions to gain employment and/or choose the best learning path for themselves.

The use of educational tools such as board games has a significant impact not only on improving language skills, but also on increasing intercultural awareness, group integration and reducing environmental and social barriers. Games (e.g. training, board and card games) can help to break down the first intercultural barriers and get used to

the group using gestures or graphics (visual thinking). At the beginning you can use language independent games to familiarize the group with the subject, with each other, and then gradually introduce new elements.

6.2 Erasmus + projects: How games are used in NFE projects.

Games (educational, training, board and card games) are increasingly being used in the preparation and implementation of projects. They are a supporting tool, not always a leading one. Games allow to reach the participant, build understanding within the group or between participants of the classes, change the return of action, make the work in the group more dynamic and prolong the role of a given person. Depending on the need and complexity of the project, games may be used by the project management to improve the fluidity and dynamics of the project tasks, to understand certain processes taking place in the team or to create new ideas. On the other hand, they serve as educational and training tools - making the programme, offer and schedule of activities more attractive, supporting the educator and trainer in achieving their educational goals.

Games (regardless of the complexity of the rules and other dimensions) contain content that is easier to learn thanks to the elements of play. Apart from arousing curiosity and an impulse to play, games also convey theoretical content (sometimes difficult) in a friendly form, explaining the real world. Among the games we can distinguish, among others, outdoor games, fictionalized games, verbal, numerical, logical - depending on the type of challenge faced by the participant/group; competence/skills to be developed - you can choose the appropriate game category. Working with a game involves reading, understanding, and moving on to an action/action plan. After a given game it is necessary to collect feedback from the group, draw conclusions and formulate recommendations. The relationship between a group of young people and an educator/trainer/teacher is based on a partnership, on the joint formulation of objectives and tasks that participate in a given project, undertaking. Thanks to the contract, the initiated group process may follow paths of constructive cooperation, based on mutual understanding of needs and expectations. Games can be very useful - in this mutual knowledge of each other, but also in determining their strengths and weaknesses. The term 'EDUTAINMENT' seems to indicate - formulated by researchers of modern technologies and education best reflects the nature of the use of games in the educational process. Educational entertainment is a mixture of two words: educational (educational) and entertainment

(entertainment), and at the same time it is a future trend when it comes to education[20]. Edutainment plays a significant role in gameplay.

Edutainment programs combine valuable educational message with elements of entertainment, they are one of the most effective methods of transferring knowledge and shaping social attitudes. Activation for learning can include a number of tools, one of which is the game. (...) It can be said that edutainment in narrow translation means all activities whose main purpose is to learn, educate or shape specific attitudes, while all entertainment elements are aimed only at making the whole educational process more attractive. Exactly as the British writer Ian McEwan pointed out when he said*, 'If science can be fun, it is very good. But play is a secondary issue.*[21]

6.3 Games (activities) specifically designed to improve language competences (resources and toolbox).

Many games/activities aiming at the acquisition of a second or third language, used within the Cypriot primary educational context could be identified. One of the most important ones is the European project POLYGLOT which provides online free courses to promote bilingualism of students.

As it's being described within the project's e-platform '[t]he European Commission Communication Rethinking Education: Investing in skills for better socio-economic outcomes (2012) stresses the necessity to foster early language learning, to tap into the potential of ICT and Open Educational Resources for learning, to scale-up use of ICT in learning and teaching.

According to these priorities, this project will develop a methodology and tools helping educators and parents to use web based OER for bilingual education in preschool. More in detail, POLY will develop:

• two reports, one on the State of the art on bi- and multilingual education in kindergartens and the other one on web based OER (including free or very cheap Apps) for bilingual education

• a set of Guidelines on the use of web based OER for bi-lingual education in kindergartens, and, based on this,

[20] *http://blog.2edu.pl/2016/03/wykorzystanie-gier-w-szkoleniach-przeglad-teorii-i-mozliwosci.html*
[21] *https://sprawnymarketing.pl/edutainment-grywalizacja*

• two Guides and a two E-courses addressed respectively to educators and parents.

The methodology and tools will be piloted at EU level with over 500 amongst educators, parents and children and then finalized.'[Online Source: http://www.polyglot.expert/]

For more information, the interested user could visit the project's webpage http://www.polyglot.expert/ , and through the selection of the option 'E-course' could visit the free online course which contains many game activities. The system requires a login authentication (username; password). All the material is being provided in English, Dutch, Italian, Greek, Turkish and Bulgarian.

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