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Meeple School Kit

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Introduction

The Meeple School project

The European Union sets **8 key competences** to be developed in school education: linguistic communication; communication in foreign languages; mathematical, scientific and technological competence; digital competence; learn to learn; social and civic competence; sense of initiative and entrepreneurial spirit; and cultural awareness and expressions.

Of these, the competencies of "learning to learn", "digital competence" and "cultural awareness and expressions" are the most difficult for teachers to work on and evaluate. The last two are directly related to the priorities of the Erasmus+ program, digital transformation and social inclusion. The current reality in primary education in Europe is that our classrooms are more heterogeneous than ever. On the one hand, the necessary increase in immigration implies that there is a cultural mix; on the other, the increase in the number of divorces means that we have to consider different family structures; finally, the number of students with limited social competencies or with attention deficit disorders is worryingly increasing. All this makes it necessary to develop **projects that seek inclusion and attend to the diversity** that exists in our classrooms, managing to motivate the student towards learning, such as the one we present in toolkit.

Meeple School project has developed a **game-based learning methodology**, with the peculiarity that **modern board game**s are used. This methodology has been successfully tested in previous projects by one of the partners. However, the methodology had not been tested in children 6 to 12 years of age (primary education), where it has ben confirmed that has greater potential, since the game is part of the child's intelligence and schemes. Unlike traditional board games, modern ones involve a greater **strategic component and a need for collaboration** between players to achieve the objective. Due to these requirements, it is possible to do a post-game reflection in which the behaviors that have occurred among the players are analyzed, as well as the way in which their decisions have influenced the outcome of the game. In turn, these games constitute an ideal setting for some students to explain to others, both the operation with the strategies followed, analyzing the way in which the experienced information is structured and shared, something essential to work on the key competences.

Consequently, modern board games, accompanied by the necessary support material, are considered a useful **tool to be incorporated into the teaching process in primary education**. Beyond the work of the key competences, this methodology allows to form groups of students who usually have no relationship, who have even had some disagreement in the course of the academic year or who simply have never had an encounter.

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Consortium

Colegio Sagrada Familia Jesuitinas

Coordinator

Valladolid, SPAIN

Mother Cándida María de Jesús founded the Congregation of the Hijas de Jesús on 8 December 1871 in Salamanca. On 1 September 2018 the Jesuitinas Educational Foundation was launched assuming the ownership of the 21 centres of the Congregation, thus consolidating our Educational Project and the charism of Madre Cándida.

Jesuitinas
SAGRADA FAMILIA

The mission of the Jesuitinas Educational Foundation is the development of the individual from a Christian point of view, with the aim of forming autonomous, free, responsible, prepared people with a system of values in accordance with the Gospel message.

ASPAYM Castilla y León

Partner

Valladolid, SPAIN

ASPAYM Castilla y León was founded 30 years ago with the sole objective of improving the quality of life of people with disabilities. In its beginnings, the organisation focused on the care of people with spinal cord injury. However, during its years of activity, ASPAYM Castilla y León has evolved in line with society, providing care for all types of physical disability (spinal cord injury, stroke, ataxia, etc.). It currently has more than 2,000 members throughout the community and more than 300 workers. ASPAYM Castilla y León works with new projects to enable the social and labour inclusion of people with disabilities, to bring them closer to the real world, and to make them carry out any type of activity without any limitation. ASPAYM Castilla y León aims to be a leading organisation in the third sector which, through the quality of its programmes and activities, research and the use of new technologies, provides people with disabilities, and society in general, the necessary tools to achieve its mission.

Scoala Primara Lorelay

Partner

Iași, ROMANIA

Lorelay Primary School is a private school, founded in 2009, in Iasi, a town situated in the East part of Romania.
Our school is focused on finding different active methods for teaching, in order to help our students achieve the curriculum goals.
Our mission is to develop in kids critical thinking, joy, motivation, respect, creativity, autonomy, tolerance and acceptance.
Games are the best exercise when working with kids.

6th Primary School of Karditsa

Partner, GREECE

The 6th Primary School of Karditsa which was founded in 1938, is a State School and it is located in Thessaly in the centre of Greece. Students have been involved and awarded in eTwinning and Erasmus projects since 2012, that assist modern teaching and learning, such as the CLIL methodology, which was implemented to experiential actions and practices and connected crosscurricularly to several school subjects.
Our school is open to cooperation with other schools too, implementing inter-school programs targeting to be involved in European projects which is a priority in our school policy.

We strongly believe that projects will help them understand the dynamics of the groups and the way they influence the classroom so that they can include everyone, all the students in their class in a better quality lesson, developing an atmosphere of respect and tolerance towards social, cultural and physical inequality within the school community and therefore, making easier integrating policies.

METHODOLOGICAL JUSTIFICATION: the eight Key Competences

People need the right set of skills and competences to sustain current standards of living, support high rates of employment and foster social cohesion in the light of tomorrow's society and world of work. Supporting people across Europe in gaining the skills and competences needed for personal fulfilment, health, employability and social inclusion helps to strengthen Europe's resilience in a time of rapid and profound change.

In 2006, the European Parliament and the Council of the European Union adopted a Recommendation on key competences for lifelong learning: '**Key Competences for Lifelong Learning — A European Reference Framework**'. Following a consultation and review of this framework in 2017, a revised framework was proposed and adopted in 2018. Since its adoption, the Recommendation was a key reference document for the development of competence-oriented education, training and learning.

The objective of the Recommendation is to improve the development of key competences for all people throughout life and to promote measures needed to achieve this objective. It encourages Member States to better prepare people for changing labour markets and active citizenship in more diverse, mobile, digital and global societies, and to develop learning at all stages of life.

Learners need to develop their skills and competences throughout their lives, from early childhood throughout adult life, and through formal, non-formal and informal learning in all contexts, including family, school, workplace, neighbourhood and other communities.

The key competences as defined in this Reference Framework aim to lay the foundation for achieving more equal and more democratic societies. They respond to the need for **inclusive and sustainable growth, social cohesion and further development of the democratic culture**.

Competences are defined as a combination of knowledge, skills and attitudes, where:

- knowledge is composed of the facts and figures, concepts, ideas and theories which are already established and support the understanding of a certain area or subject;
- skills are defined as the ability and capacity to carry out processes and use the existing knowledge to achieve results;
- attitudes describe the disposition and mind-sets to act or react to ideas, persons or situations.

Key competences are those which all individuals need for **personal fulfilment and development**, employability, social inclusion, sustainable lifestyle, successful life in peaceful societies, health-conscious life management and active citizenship.

The key competences are all considered equally important; each of them contributes to a successful life in society. Competences can be applied in many different contexts and in a variety of combinations.

They overlap and interlock; aspects essential to one domain will support competence in another. **Skills such as critical thinking, problem solving, team work, communication and negotiation skills, analytical skills, creativity, and intercultural skills are embedded throughout the key competences**.

The Reference Framework sets out eight key competences:

1. **Literacy competence**
2. **Multilingual competence**
3. **Mathematical competence and competence in science, technology and engineering,**
4. **Digital competence**
5. **Personal, social and learning to learn competence,**
6. **Citizenship competence,**
7. **Entrepreneurship competence,**
8. **Cultural awareness and expression competence.**

This Recommendation should cover a wide range of education, training and learning settings, both formal, non-formal and informal in a lifelong learning perspective. It should seek to establish a shared understanding of competences which can support transitions and cooperation between these different learning settings. It sets out good practices that could address the needs of educational staff which includes teachers, trainers, teacher educators, leaders of education and training institutes, employees in charge of training colleagues, researchers and university lecturers, youth workers and adult educators as well as employers and labour market stakeholders. This Recommendation also addresses institutions and organisations, including social partners and civil society organisations, guiding and supporting people in improving their competences from early age on throughout their lives.

Key Competences in the school curriculum

Key competences have become a feature of education policy in EU member states at different times and with different emphases since the adoption of the first reference framework in 2006. The variety of approaches taken in the different member states reflects the history of those states, the prevalent education philosophy and the educational structures already established (KeyCoNet, 2014). As a result, there is no one model followed for integrating the key competences into national curricula. Some countries have introduced them as part of national curriculum reform initiatives and have used those opportunities to ensure that the key competences are threaded through the curriculum. They are often introduced through cross curricular approaches rather than being presented as separate subjects.

There is evidence of a growing trend towards curricula based on key competences or similar broad conceptions of teaching and learning encompassing not only knowledge, but also the skills and attitudes needed in a wide range of real-life contexts (Gordon, et al., 2009). Although curricula generally continue to be organised according to subjects or areas, the aim is for learning not just within these subjects and areas but also across them and sometimes beyond them altogether (Gordon, et al., 2009; Pepper, 2011; Schneider & Stern, 2010).

The key competences can be integrated in teaching and learning across all subjects at all levels. Some aspects of the key competences will be more relevant to certain subjects and certain areas within subjects.

Implementing key competences in schools involves not only specifying them in the curriculum, but also developing appropriate structures and learning environments in the school. As many of the competences are cross-curricular, a whole-school approach to planning and implementing works best. The support of school leadership is central to this work.

Key competences are important for all learners. Differentiation in the planning and execution of teaching and learning for all children in all classes supports the development of key competences by taking account of individual differences in learning style, interest, motivation and aptitude, and reflecting these differences in the classroom. Where support structures for learners with special educational needs are required, it is important that these support the development and assessment of the key competences.

Competences will not be developed by teaching about them—learners need to experience them. There is evidence of other good practices that support the development of key competences such as cross-curricular projects, carried out during the project weeks in the schools, as well as participation in study trips and other programmes. This means that alongside classroom teaching, learning outside the classroom and appropriate activities outside the school can make a significant contribution to the development of the competences. Key competences can only be brought alive for learners in schools and classrooms, or in other rich learning environments such as outdoor spaces, communities, workplaces or virtual worlds.

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The importance of Key Competences development

A focus on key competences can lead to a broader and more engaged learning experience for students. While the development of key competences prepares young people for a rapidly changing world of work in the future, it also helps them to think critically and creatively, to work independently and as part of a team, to be innovative and to develop learning skills that are important for them as they travel through their school journey and later along the road of lifelong learning.

Competence in the fundamental basic skills of language, literacy, numeracy and digital technology is an essential foundation for building learning competence. Skills such as creativity, critical thinking, taking initiative and problem-solving play an important role in coping with complexity and change in today's society and are strengthened through the competences in the new framework. The key competences all emphasise: critical thinking, creativity, initiative, problem solving, risk assessment, decision taking and constructive management of feelings.

Challenges in Key Competences based teaching and learning

Implementing the curriculum is a challenging task for teachers and education staff (Glatthorn, A. A., Boschee, F. A., and Whitehead, B. M., 2006; Ornstein, A., and Hunkins, F., 1998). Recent changes to curricula in Europe pose new difficulties. Education approaches based on key competences and learning outcomes, which today shape a growing number of curricula in Europe, imply important shifts in the way teaching is envisaged. In the same way, teaching effectively new – or relatively new – curricular areas, such as entrepreneurship education or ICT, positioned in the curriculum as cross curricular subjects or integrated into other subjects, requires particular teaching approaches as well as changes to school organisation and culture. Teaching cross-curricular subjects requires that teachers work in close collaboration, crossing boundaries of traditional subjects. In practical terms, this means that teachers need to work together in order to develop the school curriculum or parts of it, discussing assessment standards and exchanging information about the learning development of specific students.

The competence approach requires a change of paradigm from teacher-centred to student-centred learning, which necessitates a revision of the traditional methodologies and roles of teachers.

For the effective acquisition of transversal competences, teachers need to design integrated learning activities that allow pupils to progress towards the learning outcomes of more than one competence at the same time. For instance, mathematics teachers may be expected to improve students' reading skills by highlighting the specific language patterns which are critical for the understanding of a mathematics text (Shanahan and Shanahan, 2008). The development of tasks that incorporate several learning objectives or outcomes crossing traditional subject boundaries calls for a clear definition of all relevant curriculum areas and the contribution each makes to transversal competences.

Teachers become facilitators of learning –organising teamwork, ensuring inclusion, managing classroom activity. More of their time is likely to be spent supporting individuals and less on whole class teaching. The role of the teacher is also evolving, as they are required to develop new methods supporting their new roles as collaborators, facilitators of learning, and lifelong learners. They are expected to promote the acquisition of skills to support key competence development such as decision making, in depth thinking, and problem solving amongst their students. They are expected to guide their students and instil in them a sense of personal responsibility, self esteem, and integrity. Furthermore, teachers are prompted to make learning experiences more relevant and meaningful, encourage active citizenship, and create an environment conducive to reflective thinking.

o be effective, teachers need to develop good interpersonal skills that enable them to interact positively with students and parents. Management skills, problem-solving skills and organisational skills are also important attributes for guiding students.

While it is important to identify how the key competences can be supported and developed through the curriculum at the various stages of schooling and through particular subjects, the teaching and learning environment in schools also has much to contribute to competence development. The main approach to teaching key competences is through providing learning environments that facilitate active learning.

These environments present open-ended problems and challenges to be solved through debate, experimentation, exploration and creativity. While teacher-led approaches will remain an important pedagogical practice, teachers also need to be supported to develop these other approaches that foster key competences through continuous learning and peer-to-peer support (KeyCoNet, 2014).

Effective fulfilment of the new roles by teachers depends on the school organisational and pedagogical culture. This should comprise collaboration among teachers, more developed school leadership, flexibility, strong partnerships with parents and the active involvement of students in school life.

Discussions among school staffs as part of a planning process might focus on:

- How well is the school supporting the key competences already: what are our strengths? What are our areas for improvement? How can we improve?
- Sharing pedagogical approaches and exploring new ones;
- Changes to the learning environment, for example classroom layout, spaces for individual as well as collaborative learning;
- Potential for cross-curricular approaches;
- Potential for the development of key competences through extra-curricular activities;
- Opportunities to reflect on and discuss progress.

Teachers need to be supported to develop these new methods through continuous learning and peer-to-peer support (KeyCoNet, 2014).

Assessing the Key Competences

In the school curriculum, the challenge is magnified by its general nature; it should prepare learners for the range of contexts they may encounter in their lives. It follows that assessments of key competences should measure learners' application of their competence in a range of contexts. Naturally, this may be both inside and outside of formal learning environments. Assessment must therefore relate to real-life contexts or reproduce them authentically. If the aim of assessments is to measure the use of competence in context, then this is a prerequisite for their validity. Continuous observation and documentation offer the possibility of assessment in real or authentic contexts in real-time. Standardised tests where instruments use open ended or task-based questions may be able to recreate these contexts after the fact.

While recognising the real methodological and practical difficulties in designing tools for the assessment of the whole range of the key competences, there might be a case for better integrating all competences within a coherent assessment framework. Designing assessment tools which summarise students' progress in acquiring the key competences taught through various subject areas might also be a way to make learning and teaching across the curriculum more consistent.

Finally, a greater emphasis on the key competences in all types of assessment, as well as an increased focus on the application of knowledge and on practical skills, in general, could also help to make students' skills more relevant to the demands of the labour market and the needs of modern society.

Key competences call for new ways of learning and teaching which go beyond traditional subject boundaries. Corresponding assessment tools, which reflect student achievement acquired through different subjects, are necessary to evaluate the progress of students in these areas.

Key Competences analysis conclusions

The development of key competences, their validation and the provision of competence-oriented education, training and learning should be supported by establishing good practices for better support of educational staff in their tasks and improving their education, for updating assessment and validation methods and tools, and for introducing new and innovative forms of teaching and learning.

It is important to note that key competences are not developed in isolation. They are interconnected and interdependent. For example, students need to be able to read and write effectively in order to participate in critical thinking and problem-solving activities. And they need to be able to communicate effectively with others in order to collaborate and work effectively as a team.

Teachers can play a vital role in helping students to develop key competences by creating learning environments that are challenging, engaging, and supportive. They can also provide students with opportunities to practise these skills in a variety of contexts. By teaching key competences in the school curriculum, teachers can help students to develop the skills and knowledge they need to succeed in life.

There are some tips for teaching key competences in the school curriculum:

- Make learning relevant and meaningful to students' lives;
- Provide opportunities for students to learn through hands-on activities and projects;
- Encourage students to think critically and creatively;
- Help students to develop their problem-solving skills;
- Promote collaboration and teamwork;
- Provide students with opportunities to reflect on their learning and to set goals for improvement.

There are a number of challenges that teachers face in teaching key competences in school. Some of the most common challenges include:

- Lack of understanding: Some teachers may not fully understand what key competences are or how to teach them. This can make it difficult for them to effectively integrate key competences into their curriculum and instruction.
- Curriculum constraints: Teachers are often under pressure to cover a lot of content in a short period of time. This can make it difficult to find the time to teach key competences in a meaningful way.
- Assessment challenges: It can be difficult to assess key competences, as they are often complex and context-dependent. This can make it difficult for teachers to track student progress and to provide feedback.
- Differentiation: Teachers need to cater for a wide range of learner needs. This can be challenging when teaching key competences, as they are often abstract and require students to think critically and creatively.

- Parental support: Parents may not always understand the importance of key competences or how they can support their children's learning at home. This can make it difficult for teachers to achieve their goals.

Despite these challenges, there are a number of things that teachers can do to effectively teach key competences. There are a few things that teachers can do:

- *Start early*: It is never too early to start teaching key competences. Even young children can develop their critical thinking, problem-solving, and collaboration skills.
- *Make learning relevant and meaningful:* Connect key competences to students' lives and experiences. This will help them to see the value of learning these skills and to be more motivated to develop them.
- *Provide opportunities for practice*: Key competences are best developed through practice. Provide students with opportunities to practise these skills in a variety of contexts, such as through hands-on activities, projects, and group work.
- *Use a variety of teaching methods*: There is no one-size-fits-all approach to teaching key competences. Use a variety of teaching methods to engage students and to help them learn in different ways.
- *Assess student progress*: It is important to assess student progress in order to identify areas where students need additional support. There are a number of different ways to assess key competences, such as through observation, performance tasks, and portfolios.

- *Communicate with parents*: Help parents to understand the importance of key competences and how they can support their children's learning at home. Provide parents with information and resources to help them do this.

By following these suggestions, teachers can overcome the challenges of teaching key competences in school and help their students to develop the skills they need to succeed in life.

METHODOLOGICAL JUSTIFICATION: Board Games Based Learning

The human being since ancient times has been characterized by playing. One of the first scholars of the game as a cultural phenomenon was Johan Huizinga, a Dutch philosopher and historian who in his work Homo ludens mentions the three fundamental aspects of the game (Huizinga, Johan, 2007):

• The game is an activity that we do by nature, free and no one forces us to do it.

• It helps us to create experiences that, even if they are fantasies, help us to be aware of our environment.

• Playing brings us closer to the competition, and this to the creation of the sport, so the game is, in itself, a sport.

There is evidence that the first board game arose around the year 5000 B.C. and consisted of a series of stones carved with paintings (Attia, Peter, 2016). Around 3100 B.C., board games became a real pastime, using dice and animal bones, and the first games that used a board emerged at this time (Attia, Peter, 2016). In the sixth century (Wikipedia, 2023), in India, one of the board games that will become the most famous in the world, chess, is created. Several centuries later, in 1903, the game The Landlord's Game (Attia, Peter, 2016) was created, a predecessor of Monopoly which, since it was marketed in 1935, has become the best-selling board game in the world.

All the games that emerged in the 20th century, such as Goose, Parcheesi, Trivial Pursuit, Risk and many others, are known today as traditional board games. Among the fandom it is considered that one of the first modern board games, and perhaps the one that had the most impact in the 90s, was The Settlers of Catan (Teuber, Klaus, 1995), a German-style game called Eurogame. Today it has sold more than 24 million units and has been translated into more than 30 languages (Attia, Peter, 2016).

Modern board games, unlike traditional ones (Vita-Barrull, Guzmán, et al., 2022): i) include a variety of mechanisms that require a greater strategic component and skill on the part of the players, which demands a great ability and can promote personal growth; ii) they usually include a game theme, which are not necessarily based on reality, but may be based on fantasy and fiction, as is the case of Carcassonne (Wrede, Klaus-Jürgen, 2000) or Adventurers on the train (Moon, Alan R, 2004); and iii) some of them depend on a specific cognitive process, similar to traditional psychology tests. At the end of the 90s, modern board games began to proliferate throughout Europe. In fact, in January 2000 BoardGameGeek (https://boardgamegeek.com/) was created, a worldwide reference website for traditional and modern board games. To get an idea, the most important festival in this field worldwide, the "Internationale Spieltage SPIEL" held in October in the German city of Essen, in its edition of 2022 brought together more than 209,000 people from all over the world. Today it is rare that a library or a bookstore does not also sells modern board games, which, as will be discussed in this project, can also be used for educational purposes.

Classification of modern board games

Depending on the number of players and interaction between them, the games can be divided into:

- Solo. Designed to be played by one person. Eg. Friday, Hostage negotiatior.
- Confrontational. Conceived for two players who face each other in a direct, antagonistic and coercive way to defeat the other. Eg. 7 Wonders Duel, Hive, Twilight Struggle.
- Competitive. For two or more players, where the victory conditions do not necessarily affect defeating the other players through coercion, although this is possible. Eg. Catan, Carcassonne, Ghost Blitz.
- Cooperatives. All players are on the same team and "play against the game" for a shared victory. Responsibilities are shared between players, so one player could take over the roles of the rest and play alone without the game changing. This is called “leader effect” and is something that should be avoided and/or controlled. Eg. Pandemic, Forbidden Island.
- Collaboratives. All players are on the same team and "play against the game" for a shared victory. However, responsibilities are not trivially shared between players, and one player cannot take on everyone's roles. Eg. Magic Maze, Hanabi.
- Semi-cooperatives. A player competes against the rest of the players, playing them cooperatively. Eg. Letters from Whitechapel.

Depending on the theme and the components, the games can be divided into:

- Eurogames. They are games of German origin, in which the strategic factor predominates and has minimal or no chance. The usual duration is from 30 to 90 minutes, although in some cases where there are many players it can go to more than 120 minutes. In these types of games, the mechanics are more important than the themes and sometimes they become abstract. The object of the game is usually to reach as many victory points as possible. The players are not typically eliminated and among the components there are frequently a large number of wooden pieces. Eg. The settlers of Catan, Ticket to ride, Bohnanza.
- Ameritrashes. In these games chance predominates over strategy. They usually last longer, starting at 120 minutes. The theme is above the mechanics, so they tend to be very immersive games. The rules are usually extensive and with many exceptions. The objective is consistent with the theme, which is usually fantastic or based on known sagas. Player elimination is possible and the components are usually spectacular, often including miniatures. Eg. Zombicide, Arkham Horror or Twilight Imperium.
- Wargames. Strategy game where, usually, two armies controlled by one player each, face each other on a battlefield trying to win over the rival through the use of tactics and strategies. Battles that have occurred are often simulated and have a high historical component. Eg. Memoir 44, War of the ring, Star Wars Rebellion.

- Fillers. Games with simple mechanics, lasting less than 30 minutes, that take up little space and in which the preparation of the game requires little time, which makes them especially suitable to be played among other denser or longer-lasting games. Eg. Speed cups, Sushi go!, Ubongo.
- Party games. Games that seek the socialization of the players through a high level of interaction between them with a high component of fun and laughter. The rules are very simple, usually allow a high number of players and rarely include player elimination. Eg. Time's up!, Tokyo train, The Resistance: Avalon.
- Rol (or Rol Playing Games, RPG). Interpretive-narrative game in which the players assume the role of one or more imaginary characters throughout a plot in which they interpret their dialogues and describe their actions. One of the players, called the Master, Director or Referee, directs the game and assumes the role of the characters in that imaginary world not played by any of the other players. Eg. Dungeon and Dragons, The Lord of the Rings, Star Wars.

The purpose of this project is to develop a teaching methodology through the use of board games. Taking into account the exposed classifications and, according to the games used by different scientific studies that will be explained below, it seems that the most appropriate type of games for the development of skills in primary school students are cooperative and competitive games, as well as like fillers and party games. Second, certain competitive games and eurogames may also be appropriate for certain skills and contexts.

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Benefits of modern board games

Executive functions are the set of skills and cognitive processes that allow us to successfully adapt to the environment and solve problems from the integration of the different information available, being able to carry out purposeful behaviors thanks to them (Castillero-Mimenza, Óscar, 2017). The 3 main executive functions are: flexible attention, working memory and inhibitory control (Diamond, 2013). It has been scientifically verified that between the ages of 5 and 17 there is a high association between the degree of development of executive functions and academic performance, suggesting that executive functions could predict academic performance (Best et al., 2011). In addition, in childhood, deficiency in the development of executive functions has been associated with different behavioral disorders (Gray-Burrows, K et al., s.f.; Molitor, SJ et al., 2018). Therefore, it seems necessary to develop these functions from the first moments of childhood. Modern board games have been used among the proposed interventions to improve executive functions.

A study was carried out at the University of Lleida (Spain) to evaluate the effectiveness of the application of board games on executive functions and clinical symptoms of children with attention deficit hyperactivity disorder (ADHD) (Estrada-Plana et al., 2019). The group that received the board games, compared to the control group, improved their short-term linguistic memory more and this group showed fewer behavioral problems after the intervention. In a similar study, researchers from the University of Bern carried out a controlled study on 118 children aged 10-12 from 8 different classes (Benzing et al., 2019). For 6 weeks, 61 children were doing 2 weekly sessions of 30 minutes of board games, while 57 children continued with their usual classes (control group). The board games used, Invasion of insects, Cheeky monkey, Medicine woman and Fruit salad have the characteristics of a filler, as explained in the board game classification section. The results of the study showed an improvement in executive functions in the board game group compared to the control group.

In primary education, similar results have been observed when evaluating the impact of board games on executive dysfunctions. In this case, 176 students were divided into 2 groups, applying learning based on board games in both, but applying gamification in one of them (Vita-Barrull, Guzmán, et al., 2022). After 5 months of intervention in children at risk of social exclusion, 12 modern board games (Table 1) were tested 3 times each, and a reduction in behavioral problems linked to executive dysfunctions was observed in both groups, although the group that did not receive gamification obtained better results.

Table 1. Modern board games used in the study of Vita-Barrul et.al. 2022.

Board and card game (Author, date)	Spanish name
Bee Alert (Knizia, 2012)	Abejitas zum, zum
Catch the Match (Staupe, s. f.)	El osito curioso
CLACK! (Shafir, 2012a)	Crazy clack
Halli Galli (Shafir, 1990)	Tutti frutti
Speed cups (Shafir, 2013)	Speed cups
Alles Tomate! (Knizia, 2007)	¡Vaya tomate!
Cinco Linko (Bag, 2016)	Ok play
Pickomino (Knizia, 2005)	Pico pico
6 nimmt (Kramer, 1994)	¡Toma 6!
7 Ate 9 (Hiron, 2009)	Alto voltaje
Eye sea (Shafir, 2016)	Conecta2
Piraten Kapern (Shafir, 2012b)	Isla Calavera

The modern board games used in the study by Vita-Barrul et.al. (2022), arise from a previous analysis in which they asked 15 education, mental health, and neuroscience research professionals, all of them with extensive experience in the use of modern board games, about which games from a list of 27 considered more suitable for the development of executive functions in children (Vita-Barrull, March-Llanes, et al., 2022). In the two studies carried out by this research group, it is striking that all the board games used belong to the same publisher.

Board game-based learning has also been applied to university students. The Telestrations board game (Asmodee, 2009) has been adapted as a serious game to work on social-emotional skills in physiotherapy students (Rosa, Marlene et al., 2021b). In this study, there was a facilitator, who was the person in charge of explaining the game to the students, and carrying out a final reflection (final debriefing), considering this essential for the students to understand the purpose of the game and to evaluate their behavior while playing.

This proposal of having a facilitator and final reflection has already been successfully put into practice by one of the partners of this project (Herrero, Miriam et al., 2019). The use of Telestrations in physiotherapy students worked creativity, empathy, aroused interest and most of the students considered that the game was useful for other educational purposes of their profession (Rosa, Marlene et al., 2021b). Other authors have carried out similar research on Communication and Biochemistry students using games such as Dixit (Roubira, Jean-Louis, 2008) and Radio Days (Maio-Sasso, Alejandro, 2014), observing that this methodology motivated students, promoted active participation and developed socio-emotional skills (Gonzalo-Iglesia, Juan Luis et al., 2018).

Another modern board games used, by the aforementioned research group and also by physiotherapy students, has been Magic Maze (Lapp, Kasper, 2017). In their study, they verified that the use of this board game allowed working on socio-emotional skills, such as critical thinking, empathy and problem solving (Rosa, Marlene et al., 2021a). As these authors habitually do in their research, a survey is designed in which the students assess their gaming experience, and an observation sheet is also designed and completed by a facilitator. Subsequently, two blinded evaluators analyze and classify the opinions of the students.

Modern board games have been used for educational and therapeutic purposes in schools, associations, clinics and researchers. In 2019, a systematic review and meta-analysis article was published that evaluated the impact of board games on medical education, as well as on different variables related to health (Gauthier et al., 2019). Of the 22 articles that met the inclusion/exclusion criteria, it was observed that the majority were competitive (n=12) and that the most common mechanic was question-answer in which progress in the game depended on answering correctly. Few games (n=4) implemented an action-consequence mechanic, which requires more reflection, which is why the authors end up recommending it, along with behaviors that emulate situations that can be transferred to the real world. Regarding the results, a high effect was observed in the improvement of knowledge related to health, a low-moderate effect in behavior (self-reported behavior, behavioral intentions and behavior, all of them evaluated with questionnaires or observation sheets) and a low effect - moderate in biological health indicators (eg, smoking cessation, diet, lifestyle changes). The authors conclude that board games can be effective for increasing knowledge and generating behavior changes, however, they do not seem to improve self-efficacy. At the same time, they suggest that, for educational purposes, games that integrate complex decision mechanics be used, in which each action has an assigned consequence.

In conclusion, modern board games seem to be effective for improving executive functions in children and adolescents. The commonly applied methodology requires a facilitator and a final reflection. The facilitator is the person trained in the methodology and is responsible for carrying out the final reflection, and may have completed an observation sheet during the game session. In the studies evaluated, it is not specified what training this facilitator must have, nor is the content of the final reflection discussed. Most of the studies on learning based on board games are relatively recent (since 2018), so it is necessary to continue conducting research in this line, such as the present project.

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HOW TO IMPLEMENT

in order to be able to implemento modern board games based learning to develop the eight Key Competences, we recommend the teacher to follow the following steps:

1. Select the competence to be worked on and choose the desired game. Take into account the recommended number of players and age. In Annex 1 you can find the classification of board game / Key Competence.

2. The teacher should be familiar with and master the game to be used. If you need it, you can easily find tutorials on YouTube for each one.

3. Dowload the help sheet (Annex 2) so that you can take into account the recommended variations and aspects to be taken into account for students with special needs. We also recommend you to download the Meeple School APP to have all information with you.

4. In each sheet you will find suggested questions for reflection at the end of the games session. This reflection is essential to give ducational value to the game. It can be done collectively or, if you wish, sometimes in written form. In this case, we recommend giving feedback to the class the following day.

5 Establish links between the games, the methodology and the contents of different subjects.

6 In the Annex 3, you can find evaluation forms for students and also for teachers, in case you apply the methodology in a teaching staff of many people.

7 Share your results in the teachers' forum, available at www.meepleschoolerasmusproject.eu.

PROJECT RESULTS

In this project we have collected data from 3 groups.

Firstly, 283 students who participated among all schools in the project. The evaluations provided by the students are presented below.

Secondly, from the fathers and mothers of the participating students. A total of 132 families completed the survey, whose evaluations are also shown in this section.

Finally, we collected data from the teachers, which is included in the game evaluation sheets that are attached to this toolkit and which can also be downloaded from the project website.

Tables 1 and 2 show the responses of the students to the 6-question questionnaire that they were given after trying each game for the first time. The questions shown are:

1) Would you like to play again?
2) Have you communicated a lot with the other player during the game?
3) Have you performed calculation during the game?
4) How easy was to understand the game's rules?
5) Have you thought any strategy during the game?
6) Are you able to explain another student how to play?

Table 1. Data from the questionnaire applied to students after trying each game for the first time. The answers to questions 1, 2 and 3 are shown (see table 2 for answers to questions 4, 5 and 6).

Board game	1. Play again	2. Communication	3. Calculation
3·4 Klastch!	3,5±0,8	3,1±1,1	3,7±0,7
7 ate 9	3,6±0,9	3,2±1,1	3,9±0,5
Avavalon	3,8±0,6	3,2±1	1,7±1,1
Blurble	3,7±0,8	3,6±0,8	2,1±1,3
Bohnanza	3,5±0,9	3,7±0,7	2,6±1,2
Dixit oddisey	3,9±0,3	3,4±0,9	2,2±1,3
Emotio	3,5±0,9	3,7±0,7	1,9±1,1
Forbiden island	3,6±0,8	3,8±0,6	1,8±1,1
Ghost blitz	3,7±0,7	3,5±0,8	2,4±1,3
Hanabi	3,2±1	3,6±0,8	1,8±1,1
Hungry sharck	3,6±0,9	3,5±0,9	3,6±0,8
Jessie the tourist	3,2±1	3,5±0,6	1,6±1
Kaleidos	3,6±0,8	3,5±0,8	3±1,2
Kaleidos junior	3,5±0,9	2,7±1,2	2,5±1,4
Magic maze	3,9±0,5	2,5±1,3	1,8±1,2
Magic maze kids	4±0	3,8±0,7	1,3±0,8
Math dice	3,3±1	3,5±0,9	3,9±0,5

Board game	1. Play again	2. Communication	3. Calculation
Point salad	3,6±0,9	3,3±1	3,4±1
Story cubes	3,8±0,6	3,7±0,7	1,6±1,1
Sherlock express	3,6±0,9	3,6±0,8	2,5±1,4
Sonar family	3,8±0,7	3,7±0,7	1,6±1
Speed cups	3,5±1	3,1±1	2,3±1,3
Sushi go!	3,8±0,5	3,5±0,8	3,4±1
Tokio train	4±0,2	3,9±0,4	1,5±1
Ticket to ride Europe	3,3±0,9	3,1±0,9	2,8±1,2
Ubongo	3,8±0,5	3,3±1	2,8±1,2
Ubongo Jr.	3,8±0,7	3±1	3±1,3
Once upon a time	3,5±0,9	3,7±0,8	1,3±0,6
Pandemic	3,5±0,9	3,6±0,8	1,8±1,1
Password express	3,2±1,2	3,6±0,7	2,7±1,3

Table 2. Data from the questionnaire applied to students after trying each game for the first time. The answers to questions 3, 4 and 5 are shown.

Board game	4. Understand rules	5. Strategy	6. Explain to other
3·4 Klastch!	3,7±0,7	2,5±1,3	3,5±0,9
7 ate 9	3,5±0,8	2,6±1,3	3,3±1,1
Avavalon	3,3±0,9	3±1,1	3,1±1,2
Blurble	3,7±0,7	2,6±1,3	3,6±0,9
Bohnanza	3,3±1	2,8±1,2	3±1,2
Dixit oddisey	3,5±0,9	2,7±1,2	3,3±1
Emotio	3,9±0,4	2±1,2	3,4±1,1
Forbiden island	3,1±1,1	2,9±1,2	2,9±1,2
Ghost blitz	3,6±0,8	2,6±1,3	3,4±0,9
Hanabi	3,2±1	2,6±1,3	2,9±1,2
Hungry sharck	3,5±0,8	2,5±1,4	3,3±1,1
Jessie the tourist	3,8±0,5	2,2±1,2	3,7±0,8
Kaleidos	3,8±0,4	2,2±1,4	3,6±0,9
Kaleidos junior	3,6±0,7	2,4±1,3	3,3±1,2

Board game	4. Understand rules	5. Strategy	6. Explain to other
Magic maze	3,7±0,5	2,8±1,3	3,3±1
Magic maze kids	3,6±0,6	2,6±1,3	3±1,3
Math dice	3,6±0,8	2,8±1,2	3,4±1
Once upon a time	3,6±0,6	1,9±1,1	3,4±1
Pandemic	2,9±1,1	3±1,1	2,6±1,2
Password express	3,6±0,7	3±1,2	3,2±1,2
Point salad	3,3±0,8	3±1,3	2,9±1,2
Story cubes	3,8±0,5	2,5±1,3	3,7±0,7
Sherlock express	3,6±0,8	2,8±1,3	3,2±1,2
Sonar family	3,5±0,8	2,8±1,3	2,8±1,3
Speed cups	3,8±0,6	2,7±1,3	3,6±0,9
Sushi go!	3,2±0,9	3±1,2	3,1±1,1
Tokio train	3,6±0,6	3,7±0,7	3,7±0,7
Ticket to ride Europe	3±1,1	3±1,2	2,6±1,2
Ubongo	3,7±0,7	2,9±1,2	3,5±0,9
Ubongo Jr.	3,7±0,7	2,8±1,3	3,5±0,9

Table 3. Data from the questionnaire applied to student's parents after the collecting data phase (n=132).

Our child told us about the board games played in this project.		**We think board games can be used for educational purposes in school.**	
Answer	Percentage	Answer	Percentage
Never	3,8%	Totally disagree	0,8%
Rarely	17,4%	Disagree	3,8%
Frequenlty	39,4%	Agree	25,8%
Almost every time	39,4%	Totally agree	69,7%
Total	100,0%	Total	100,0%
We used to play board games at home before the beginning of this project.		**We think board games can be used for educational purposes at home.**	
Answer	Percentage	Answer	Percentage
Never	4,5%	Totally disagree	0,8%
Rarely	28,8%	Disagree	2,3%
Frequenlty	47,0%	Agree	32,6%
Almost every time	19,7%	Totally agree	64,4%
Total	100,0%	Total	100,0%
We play more board games since our children got involved in this project		**We would like to know more about the using and impact of modern board games**	
Answer	Percentage	Answer	Percentage
Never	11,4%	Totally disagree	3,0%
Rarely	30,3%	Disagree	3,0%
Frequenlty	44,7%	Agree	39,4%
Almost every time	13,6%	Totally agree	54,5%
Total	100,0%	Total	100,0%

INTERVENTION PHASE CONCLUSIONS

This project has tested a learning methodology based on board games in primary education.

The games selected by the committee of experts have been appropriate and well received by both teachers and students. Feedback from parents and teachers, as well as students, about board games is included in this manual.

In addition, the methodological proposal is included, which will allow other teachers to apply modern board games as an educational tool in their schools, in order to work on the key competencies of the curriculum.

Students, teachers, parents of students and members of the consortium that have developed this project are satisfied with the developed methodology and consider it useful to be used in primary education in order to work on key competencies.

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Annex 1

Classification of Board Games by Key Competence

Board Games by Key Competence

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GAME	KC1	KC2	KC3	KC4	KC5	KC6	KC7	KC8
Ubongo Jr.			✓		✓			
Tokio Train					✓			
Ticket to Ride Europe					✓			
Shushi Go			✓					
Story Cubes	✓	✓						
Speed Cups					✓			
Sonar Family		✓			✓			
Sherlock Express		✓			✓			
Point Salad		✓						

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GAME	KC1	KC2	KC3	KC4	KC5	KC6	KC7	KC8
Pandemic					✓	✓		
Once Upon a Time	✓	✓						
Math Dice			✓					
Magic Maze					✓	✓		
Kaleidos Jr.	✓	✓						
Jessie the Turist		✓						
Hungry Shark			✓		✓			
Hanabi					✓			
Shost Blitz		✓			✓			

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GAME	KC1	KC2	KC3	KC4	KC5	KC6	KC7	KC8
Ubongo			✓		✓			
Password Express								
Forbidden Island					✓			
Emotio	✓	✓						✓
Dixit	✓	✓					✓	
Blurble	✓	✓						
Avalon					✓	✓		
7 ate 9			✓					
3x4 Klatsch			✓					

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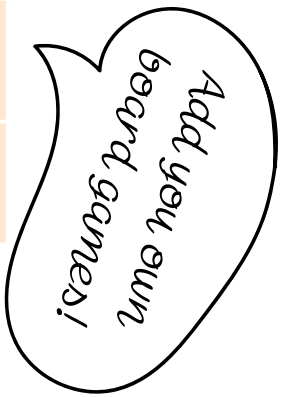
GAME	KC1	KC2	KC3	KC4	KC5	KC6	KC7	KC8
Kaleidos	✓	✓						
Sonar			✓		✓			
Bohnanza	✓						✓	



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Annex 2

Evaluation tools

Questionnaire for students

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NAME OF THE GAME				
Would you like to play again?				
Did you communicate a lot with other players during the game?				
Have you made calculations during the game?				
How easy was it to understand the rules of the game?				
Did you come up with any strategies during the game?				
Do you think you can explain the game to another colleague?				

Would you like to share more about this experience?

Questionnaire for teachers

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KEY COMPETENCE	1	2	3	4
It was possible to play the games and do the debriefing during class time.				
The explanation of the games took little time (<5 min)				
The students asked many doubts about the games after the explanation.				
The students asked many doubts about the games during the gameplay.				
The pupils were motivated to play the games.				
I could implement the games as planned.				
It is difficult to control these games without the help of another teacher.				
I had to make adaptations of the original rules of the games.				
It was easy to organize the class to play the games.				
The games are adequate to develop the proposed skills.				

1 = Strongly disagree / 2 = Disagree / 3 = Agree / 4 = Strongly agree

Questionnaire for parents

Co-funded by the European Union

NAME OF THE CHILD:	1	2	3	4
Our child told us about the board games played				
We used to play board games at home before the kids played at school				
We play more board games since our children got involved in this initiative				
We think board games can be used for educational purposes in school				
We think board games can be used for educational purposes at home				
We would like to know more about the using and impact of modern board games				
Just by curiosity, have you already got any board game used in class? In positive case, write which one.				
Have you bought any board game used in class? In positive case, write which one.				
Add any comment if you want.				

1 = Strongly disagree / 2 = Disagree / 3 = Agree / 4 = Strongly agree

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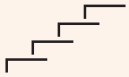
Annex 3

Board Games Sheets

Ubongo

Key Competences: • *Science, Technology, Engineering, Mathematical* • *Learn to Learn*			
	4	30 min	+8 2º - 6º grades

Soft skills: *Self control, abstract thinking, organization and planning, decision making and deduction capacity*

Variants and steps to start playing:

- To avoid frustration or stress we recommend playing without the hourglass. If a student is stuck, another who has finished can help him.
- The number of squares of each shape or each board can be used with mathematical purposes. For example, students can calculate areas or can work with coordinates.
- Using the same board but rotating it could be used for spatial orientation and laterality.

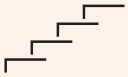
Adaptations for special needs:
In students with special needs it is essential to play without time. In some cases Ubongo Junior can be more adequate.

Discussion:

- How can you relate this game with what you do in the class?
- Do you find the game easy/difficult?
- Would you like to be helped by a colleague?
- What kind of help would you need?

My notes:

Ubongo Jr.

Key Competences: • *Science, Technology, Engineering, Mathematical* • *Learn to Learn*			
	3 - 4	20 min	+5 1º - 3º grades

Soft skills: *Deduction Capacity, Abstract Thinking*

Variants and steps to start playing:

- Ubongo Jr could be appropriate to work spatial orientation and laterality. It also can be used for learning positions and directions in English classes.

Adaptations for special needs:

Students with special needs will require more time to solve the puzzle. You can use the colors, the animals or the number of squares for educational purposes. For example, flip the tokens and try to remember what animal is on the other side, as a memory game..

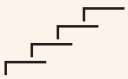
Discussion:

- Identify all the animals in the tokens.
- Can you classify them in any way? How?
- How can you relate this game with what you do in the class?
- Do you find the game easy/difficult?
- Would you like to be helped by a colleague?
- What kind of help would you need?

My notes:

Co-funded by the European Union

Tokyo Train

Key Competences:			
• *Learn to Learn*			
	4 - 6	15 min	8+ 1º - 6º grades

Soft skills: *collaboration, nonverbal communication*

Variants and steps to start playing:

- It is recommended reading the names of the characters out loud before playing. If we want them to keep in mind the movements, we can perform them with the whole class, like a warm up.
- As a variation, instead of miming the movements, they can use a foreign language to refer to cards as colors or description of their characters.
- Another variation of the game could be playing physically with the children in the class, instead of the cards with characters**.**

Adaptations for special needs:

- In students with special needs we can start by giving to each student 6 passengers and a card with the spatial distribution, and ask them to put the passengers in the correct order.
- Then we recommend using descriptions of the people or even the colors of the cards.

Discussion:

- Represent any gesture you can use to communicate with other people?
- Do you think non verbal communication means the same in every culture?
- Mention some differences between your culture and another one.
- What requirements are needed to travel to another countries?
- Why it is important to travel?
- Did you manage to pronounce the names?
- What strategy did you use?
- What could you do in order to be able to pronounce them correctly?

My notes:

Co-funded by the European Union

Ticket to Ride Europe

Key Competences:			
• *Learn to Learn*	4	45 min	8+ 3º - 6º grades

Soft skills: *Planning & organization, decision making*

Variants and steps to start playing:

- The first day the explanation of this game can take 15 minutes. Then, it's complicated to finish the game the first time students play it.
- In some cases the routes can be scored at the end of the game instead of during the game.
- Playing in pairs can be interesting for working decision making capacity.
- Since the board is a map of Europe, it can be used for teaching or reviewing geographical or historic contents.
- The colored boxes on the board can also be used to do different calculations.

Adaptations for special needs:

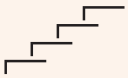
This game can be played by students with special needs by simplifying the rules. For example, giving them one short route**.**

Discussion:

- What cities of the board did you recognize?
- Which one would you like visiting? Why?
- What things are important if you want to visit another country?
- Were you planning every turn? Explain us what was in your mind

My notes:

Sushi Go

Key Competences:			
• *Science,Technology, Engineering, Mathematical*			
	4 - 5	20 min	8+ 2º - 6º grades

Soft skills: *Self control, abstract thinking, organization and planning, decision making and deduction capacity*

Variants and steps to start playing:

- It is important to explain how to score each card with different examples at the beginning of the game.
- One option can be to prepare some cards on the table as if a three player round has finished. Then, ask students to calculate the score of each player.
- In order to reinforce the mathematical competence, it is interesting after the game to ask every student to count the points of all the players. This should be done in silence and then it should be checked.

Adaptations for special needs:

- For special needs students we can remove some cards: Wasabi and sticks. Then also, Sashimi and Gyoze.
- In order to help the final score calculation, let students use a pen and a paper.

Discussion:

- Which cards do you think are more complicated to score?
- Which ones are less complicated?
- What was the most difficult part in the decision making?
- Can you relate this board game with any subject? How? Why?

My notes:

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Story Cubes

Key Competences:			
• *Literacy* • *Multilingual*	4 - 6	20 min	6+ 1º - 6º grades

Soft skills: *Written, Non-Verbal, Oral Communication, Creativity*

Variants and steps to start playing:

- In this game stories can be spoken or written, either individually or in groups.
- You can ask them to use different verb tenses during the story.
- They can also perform the story at the end of the class.
- You can try to link the game to the class agenda by asking students to include elements explained at class in their story.
- You can also permit the players to choose which face of the dice to use.
- It is also possible to work on Multilingual Competence by using a second language.

Adaptations for special needs:

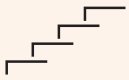
- It is a very open-scheduled and adaptable game and it can easily be played by most students with special educational needs. If the students have very serious difficulties, we can personalize the way they will deal with dice, such as to ask them to say something with this object, as if they have seen or used such a thing or where we can meet it, or any sentence about it.
- There is a version with bigger size dice that may help visually impaired pupils.

Discussion:

- Was it easy or difficult to create a story? Why?
- What activities in real life increase your creativity?
- What do you think creativity is useful to?
- How did you find working in group in this game?
- Would you rather work alone or in group?
- What new ideas did you get from your colleagues?
- Did you respect the correct structure of a story?
- What other materials would it help?
- What would you change in your story next time?

My notes:

Speed Cups

Key Competences: • *Learn to Learn*			
	4	20 min	6+ 1º - 6º grades

Soft skills: *Resilience, deduction capacity*

Variants and steps to start playing:

- In order to avoid frustration you can use it in a non competitive mode.
- It can also be played in pairs, so players must place cups in a consecutive way.
- In an advanced mode of playing in pairs, one player can be blindfolded and the other one can describe how to place the cups.
- A variation can be to ask students to draw their own cards.
- You can use Speed Cups in Physical Education by wearing such colors of clothes as the cups. Students must place themselves as in the horizontal cards.

Adaptations for special needs:

In students with special needs you can link a syllable to each color and they read the final word. They can also say out loud the order of colors after completing the card.

Discussion:

- Which of the cards did you find easiest/hardest to do?
- You have played different variants of the game, can you propose a new one?
- Which of the cards did you find easiest/hardest to do?
- What was the happiest moment/most frustrated moment?
- How would you change the game in order to be less stressed?
- Did you understand the logic behind the cards?

My notes:

Sonar family

Key Competences:			
• **S***cience, Technology, Engineering and Mathematica* • *Learn to learn*	4	40 min	8+ 4º - 6º grades

Soft skills: *Abstract thinking, deduction capacity*

Variants and steps to start playing:

- You can use the first class hour to explain the game and the rules and play some trial rounds. It is recommended to start with the easiest mission with the support of the teacher and ensure that both controllers and captains have executed their actions without forgetting any steps.
- To learn how they have to draw or move, a recommendation is to create a trail common sheet and use it with the whole class as an example. This game is useful for working orientation and laterality.

Adaptations for special needs:

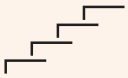
This game is a bit difficult for students with special needs. However, they can participate in heterogeneous groups, with the easy role of captain, but the cooperator must check if the actions are noted correctly. The crucial role of the radar controller could be difficult so they need an assistant.

Discussion:

- What role was easier to play? Why?
- How would you modify the rules to make the game easier or more difficult?
- In what period of history ship battles happened?
- What strategy you think that is the best to follow?
- What soft skills do you think that can be developed with this game?

My notes:

Sherlock Express

Key Competences:			
• *Science, Technology, Engineering and Mathematical* • *Learn to Learn*			
	4	20 min	7+ 1º - 6º grades

Soft skills: *Deduction Capacity, Abstract Thinking*

Variants and steps to start playing:

- It is essential to start the game by explaining the 3 components in a card.
- As frustration may appear to students who are not very quick, you can start the game by playing it in turns instead of competing.
- As a variation, students can write down the missing clues and create a story. Another one is to use the game in teaching foreign languages.

Adaptations for special needs:

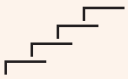
- For Special Needs students you can play in a non competitive way, then in turns.
- Another adaptation is to find similarities and differences between the cards.

Discussion:

- Mention all the animals, places and objects of the cards.
- How did you feel when a teammate was faster than you?
- What daily activities do you relate this game with?
- What strategy have you applied to get the solution?
- What mode of playing did you like more? Why?
- Can you remember the places? What about the objects?
- Can you suggest other places, objects or characters that make sense on the same context of game?
- Can you suggest a new rule?

My notes:

Point Salad

Key Competences:			
• *Science, Technology, Engineering and Mathematical*	4 - 6	20 min	8+ 3º - 6º grades

Soft skills: *Abstract thinking, decision making*

Variants and steps to start playing:

- In order to make the game easier each player can start with a card of goal. Then the player would have a criterion to draw cards.
- As a variant students can play in pairs so they can discuss if it's better to take vegetables or a new goal. We can also ask students to check their score after each round.

Adaptations for special needs:

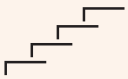
- For students with special needs, the most complex score cards (those that subtract points) can be removed.
- When a student draws a card, the teacher could update the score.

Discussion:

What goal cards were more difficult to score? Why?
What influenced you to draw a vegetable or a goal card?
What strategy would you use to score points next time?

My notes:

Password Express

Key Competences:			
• *Literacy* • *Multilingual*			
	4 - 6	20 min	10+ 1º - 6º grades

Soft skills: *Oral and written communication, creativity*

Variants and steps to start playing:

- It is important to create homogeneous groups.
- In the first rounds you can avoid using the hourglass.
- Instead of playing in turns, teams can write down the words during a period of time and then share it.
- It could be interesting to register the words and comment on them after playing. Trying to make a sentence with all written words can be also interesting. If you want to use the game to introduce a topic of the subject, you can choose specifically the semantic fields.
- If you play as suggested, you can give more points to words which are not repeated in all teams.

Adaptations for special needs:

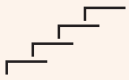
This game is difficult to play with Special needs students. You can give them a list of words, and they must choose which words fit.

Discussion:

- Did you hear words from your classmates that you didn't know before?
- Which ones?
- What semantic field was easier or more difficult? Why?

My notes:

Pandemic

Key Competences: • *Learn to learn* • *Social & Civic*			
	4	45 min	8+ 5º - 6º grades

Soft skills: *Collaboration, empathy, negotiation, organization and planning, decision making*

Variants and steps to start playing:

- Pandemic is a complicated game, so we recommend that the facilitator knows it perfectly in order to explain it properly.
- The first time you explain it can take, at least, 30 minutes.
- However, it is a very enriching game to develop teamwork.
- In order to take advantage of the potential of the game, it is difficult that the first time the game is applied it can be finished. Developed skills are worked especially from the second and third games, being a game with great replayability.

Adaptations for special needs:

In students with special needs it is recommended not to use epidemic cards in the first game.

Discussion:

- Did you help your colleagues in making decisions?
- Did you accept suggestions from your team?
- Were there conflicts between the team during the game?
- How did you solve them?
- Were you a leader or a follower?
- Did you listen to the opinion of your teammates?
- Did you feel that your team players listened to you?

My notes:

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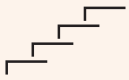
Once Upon a Time

Key Competences: • *Literacy* • *Multilingual*			
	4	20 min	8+ 1º - 6º grades

Soft skills: *Written & oral communication, creativity*

Variants and steps to start playing:

- Since Once Upon a Time is a game to develop creativity, we encourage you to let every student create a complete story. Avoid the rule of interruptions. It's better if students create their own stories before creating a story in the group. Give each student from 4 to 6 cards for their first story.
- The story created by each student can be written and then shared. This can be done also in teams.
- It could be interesting and funny performing the stories.

Adaptations for special needs:

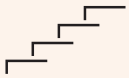
- For special needs pupils it is suggested that each student takes 2 cards and chooses one of the two when it is his/her turn, and throws it so as to continue the story with the goal of reaching the end they have as a goal. No interruptions are allowed.
- The story is being told orally and when it is finished we try to repeat the story by looking at the cards that were placed in a row.
- Afterwards, if we want, we can ask them to write it, too, if it is possible.

Discussion:

- Was it easy or difficult to create a story? Why?
- What activities in your life increase your creativity?
- What do you think creativity is useful to?
- Did your colleagues give you new ideas for next stories?
- Would it help you to work in pairs or groups?
- What changes in the game would help you to improve?
- How many sentences did you say for each card?
- Do you think you could say more next time?
- What did you learn from this game?

My notes:

Math Dice

Key Competences:			
• *Science, Technology, Engineering and Mathematical*			
	2 - 3	10 min	8+ 1º - 6º grades

Soft skills: *Self control, Abstract thinking, resilience*

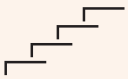
Variants and steps to start playing:
We recommend avoiding competition in the first rounds and playing in turns. More dice or other kinds of dice can be used. Role playing game dice are very suitable for this purpose.

Adaptations for special needs:
For special needs pupils we can let them use a pen and a paper to do the operations.

Discussion:
- How do you think you can improve in this game?
- Can you think of other ways to play with these dice?
- In what day life activities can you use what you have learnt with this game?

My notes:

Magic Maze

Key Competences: • *Learn to learn* • *Social & Civic*			
	4	20 min	8+ 1º - 6º grades

Soft skills: *Self control, Collaboration, Ethics, Time management, Tolerance*

Variants and steps to start playing:

- The rulebook is very clear and following the scenarios as suggested allows players knowing how to play. Although this game should be played in silence we recommend letting students speak until they understand the rules perfectly.
- We also recommend not using the hourglass as it might create anxiety and nervousness to the players. Since this is a collaborative game and some scenarios are more difficult this game promotes team building. This is also a good game for working laterality.

Adaptations for special needs:

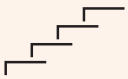
- The children with special needs can play it with the help of an assistant for orientation or for reminding them to take action.
- They can participate in heterogeneous groups and be helped by their teammates.
- Furthermore, they can take easier roles and tasks

Discussion:

- Have you respected the rules or were you tricky?
- How did you feel when you were waiting for another player to move a pawn?
- Have you experienced frustration during the game?
- How can you manage it?
- Did you manage to respect the rules?
- How did you manage to cooperate with your team if you could not talk?
- What strategy could you use in order to cooperate better?
- Were there any rules that were hard to follow/understand?
- How did you react when your colleagues made mistakes?

My notes:

Kaleidos Jr.

Key Competences: • *Literacy* • *Multilingual*			
	4	20 min	5+ 1º - 6º grades

Soft skills: *Observation, Time management*

Variants and steps to start playing:

- To familiarise the pupils with the cards, you could ask the children to describe them.
- In order to simplify the game students can name objects that they recognize and write them.
- One version could be that one pupil wr ites five items and the others have to find them in a specific time.
- Second version could be finding similar items in different cards, like same animals.

Adaptations for special needs:

This game can be used by students with special needs for oral or written production and for increasing their skill of attention.

Discussion:

- Could you think of a strategy in order to analyse the drawing better and find more objects?
- What/who could help you improve?
- In what daily activities is it important to be observative as in this game?
- Did you feel chaos looking at these images?
- Why is it important to be organised in life?

My notes:

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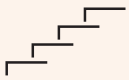
Jessie the Turist

Key Competences: • *Multilingual*			
	2 - 4	20 min	10+ 1º - 6º grades

Soft skills: *Self control, abstract thinking, resilience*

Variants and steps to start playing:

- The game requires students' attention to the cards as they have to understand what the sentence says related to the picture and to decide whether it is right or false grammatically or semantically.
- Variants are always useful to deal with different situations in your teams. As you may have weaker students in English, we suggest letting teammates translate the sentence in each group before voting it. Another option is to play it in teams and give extra points to the ones who recognized the mistake and another extra point to the one who solved it well. Also, the teacher can choose who will answer. We must say that cooperation is reinforced very much when playing in teams.
- All the call can play at the same time.

Adaptations for special needs:

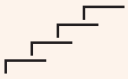
This game is hard to implement in Special Needs classes as the level could be too high for them.

Discussion:

- Were there easy or difficult questions?
- Were the sentences concerning the English language easier?
- Give some examples where English is important in life.

My notes:

Hungry Shark

Key Competences:			
• *Science, Technology, Engineering and Mathematical* • *Learn to Learn*			
	3 - 5	20 min	6+ 1º - 6º grades

Soft skills: *Self-control, abstract thinking, resilience*

Variants and steps to start playing:

- Since Hungry Shark was designed as a serious game, the rules are very well structured in three play modes of increasing difficulty.
- We strongly recommend following these modes, especially the first time the students play the game.

Adaptations for special needs:

If the level of the students is different, or in the case of students with special needs, we recommend not playing in competitive mode, but in turns. Thus, when flipping the cards, the student will give the solution and then the others will assess if it is correct.

Discussion:

- What strategy did you use to give the solution?
- What progression have we used during the game?
- Would you be able to explain the game to another student who didn't know it?

My notes:

Hanabi

Key Competences:			
• *Learn to learn*	3 - 5	20 min	8+ 1º - 6º grades

Soft skills: *Self-control, abstract thinking, resilience*

Variants and steps to start playing:

- Since Hanabi is a collaborative game, it is interesting for the teacher to make groups to encourage certain students to work as a team.
- We can put together students who have had mishaps or some who usually do not interact, since the game tends to create a team.
- In the first game, and in order to make it easier and promote a victory, you can play without the blue tokens, that is, you can give as much information about cards as you want. However, it is interesting to include the red tokens so that there is a possibility of losing.

Adaptations for special needs:
Students with special needs may be allowed to take notes on the clues received.

Discussion:

- How did you react when a colleague made a wrong decision?
- How did the colleagues react when you made a wrong decision?
- How could you, as a team, improve next time?
- How easy was to understand the rules of the game? Why?
- What tips would you give to other players in order to be able to succeed in the game?

My notes:

Ghost Blitz

Key Competences:			
• *Science, Technology, Engineering and Mathematical* • *Learn to learn*	3 - 5	20 min	8+ 1º - 6º grades

Soft skills: *Self control, deduction capacity, abstract thinking*

Variants and steps to start playing:

- We suggest starting by explaining the name of the objects and their color. Then classify cards as easy or difficult. In an easy card an object is well represented in shape and color. In difficult cards no object is well represented neither in shape nor in color.
- In order to avoid frustration for the kids who are not fast enough and to help them understand the game better, you can start in turns instead of competing. In this case other players must check if the decision was good.
- When you're playing the competition mode, as a variation, you can put the student that won to flip the next card and to not play that round, and so on. Also, as an advanced option, you can put the students draw impossible cards. Another variation can be to create a template with the objects so all students can play at the same time.

Adaptations for special needs:

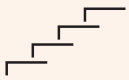
For our special needs pupils we can change a rule and ask them to mention the object chosen, instead of grabbing. We can also ask them to explain the decisions taken.

Discussion:

- What did you think in order to choose the right element?
- How did you feel when somebody else was choosing the right element?
- What strategy could you learn from this in order to help you have better results?

My notes:

Forbidden Island

Key Competences:			
• *Learn to learn*			
	4	30 min	10+ 5º - 6º grades

Soft skills: *Collaboration, Empathy, Negotiation, organization and planning*

Variants and steps to start playing:

- The first time you explain it can take, at least, 30 minutes. It is recommended to supervise the first round to solve any doubt. Additionally, it's important to remind the players reading at the beginning of every turn the helping card.
- In order to make it easier, players can start with 4 cards instead of 2. Remind players the importance of keep talking during the game and trying to plan the entire turn before acting.

Adaptations for special needs:

This is a complicated game to be used in special needs pupils, but you can try playing it without the "water rising cards".

Discussion:

- Did you help your colleagues in making decisions?
- Did you accept suggestions from your team?
- Were there conflicts between the team during the game?
- How did you solve them?
- Were you a leader or a follower?
- Did you listen to the opinion of your teammates?
- Did you feel that your team players listened to you?

My notes:

Emotio

Key Competences:

- *Literacy*
- *Multilingual*
- *Cultural & expression*

3 - 5	20 min	6+ 1º - 6º grades

Soft skills: *collaboration, non verbal and oral communication, creativity, empathy*

Variants and steps to start playing:

- Emotio has been designed to develop Emotional Intelligence.
- The key competences developed through this board game are Literacy, Multilingual and Cultural and Expression key competence. The soft skills developed are Collaboration, non verbal and oral communication, Creativity, Empathy and Tolerance.
- Before playing the game, the pupils should be allowed to study the cards and discuss the emotions presented. They could play with the cards, group them as they want, explain them, and ask questions about symbols and their explanations.
- For the beginning, the cards could be translated into the mother tongue, but after some rounds, it is possible to play it in English, in order to develop multilingualism.
- Some of the pupils could be shy and not wanting to share much about their emotions and experiences, so teachers should encourage them to express themselves.
- The cultural differences regarding expressing your own feelings should be taken into consideration while playing this game.

Adaptations for special needs:

It' s a game where students with difficulties can easily participate with joy, and it proved that it boosts their self-confidence. It can also be played by students with more serious needs, by personalizing the questions and helping them a little about which emotion appears in the picture or playing otherwise such as categorizing the emotions.

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Emotio

Discussion:

- How did you feel playing this game?
- How hard was to express your feelings?
- Do you know that in this game there are no good or bad answers as there are no bad or good emotions?
- Did you recognize all the emotions?
- Did you manage to express non-verbal emotions?
- Was there any emotion you did not want to share with the others?
- Is there something you would like to talk alone with the teacher after the class?
- How you ever spoken about this kind of emotions with any person? Would you like to?

My notes:

Dixit Odissey

Key Competences:			
• *Literacy* • *Multilingual* • *Entrepreneur ship*	5 - 8	30 min	6+ 1º - 6º grades

Soft skills: *Deduction capacity, creativity*

Variants and steps to start playing:

- Cards are the key component of Dixit, so teachers could prepare them according to a subject or a topic you want to discuss with the students.
- As a variant we suggest that instead of saying a word, you can tell a story, a title of a film or a book.
- A story or a tale can be created together, with the cards which have appeared in a round.
- It is also possible to play by showing a card and asking each player to write words related. Most or less common words will get more points.

Adaptations for special needs:

Students with special needs can participate in teams and play the game with the help of another assistant if it is needed. They can focus on the pictures and select the picture they think it matches with the description or say their own description when it is their turn to be the narrator.

Discussion:

- Did you find it difficult to associate the image with the word?
- Do you think that creativity could be improved using this game?
- Why is creativity important in life?
- How do you think your colleagues guessed the right card?
- How could a person develop his/her creativity?

My notes:

Bohnanza

Key Competences:			
• *Literacy* • *Entrepreneur ship*	3 - 5	40 - 45 min	12+ 3º - 6º grades

Soft skills: *Oral communication, negotiation, organization & planning, Decision making*

Variants and steps to start playing:

- In order for the smaller pupils to understand the rules, writing them on the blackboard can help. At the beginning, it can take more than an hour to play it and each group may need an assistant to supervise the game.
- It is a game where communication and collaboration is very high. It is important to pay attention to students that participate less and encourage them to talk. Creating appropriate groups is essential for working the key competences

Adaptations for special needs:

Students with special needs can participate in teams and play the game with the help of another assistant if it is needed. They can focus on the pictures and recognise the similar ones but they need a person to guide them and remind them the steps.

Discussion:

- What kind of arguments have you used for negotiation?
- What aspects do you find difficult in negotiation?
- How did you convince your colleagues to change cards with you?
- How would you negotiate with your colleagues next time?
- What were you paying attention to during the game?
- What was the hardest decision you took?
- What did you do when you realised you can not convince your colleague to give you a card?
- Would you make alliances?
- Did you try to pay attention to others' strategies?
- What did you find out that you want to use next time?
- How did your colleague convince you to change cards with him/her?
- What strategy do you find most efficient, from you or your colleagues?

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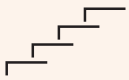
Bohnanza

Discussion:

- What kind of arguments have you used for negotiation?
- What aspects do you find difficult in negotiation?
- How did you convince your colleagues to change cards with you?
- How would you negotiate with your colleagues next time?
- What were you paying attention to during the game?
- What was the hardest decision you took?
- What did you do when you realised you can not convince your colleague to give you a card?
- Would you make alliances?
- Did you try to pay attention to others' strategies?
- What did you find out that you want to use next time?
- How did your colleague convince you to change cards with him/her?
- What strategy do you find most efficient, from you or your colleagues?

My notes:

Blurble

Key Competences:			
• *Literacy* • *Multilingual*	3 - 6	5 min	6+ 1º - 6º

Soft skills: *Written, non-verbal and oral communication, creativity*

Variants and steps to start playing:

- Since some students need more time to think and react, it may be useful to leave a gap (about 3 seconds) or count to 3-5 before answering. In this way slower students are less frustrated.
- In 1st grade we recommend writing the word instead of saying it. Also playing in teams could make it easier. Write as many words as possible and count the number.
- Words can also be spelled.
- Cards of Blurble are very versatile and can be used for playing memory games, creating tables to work with Cartesian coordinates, practising spelling or playing with semantic fields. Also making groups of cards with similar sounds can be an opportunity to work rhythm.
- If the game is used in a foreign language, to adapt their knowledge to the game, the vocabulary cards that the students know can be selected to simplify the game.

Adaptations for special needs:

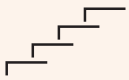
For special needs students we recommend identifying the image by saying it loud.

Discussion:

- Create a new game with these components and share it with the rest of the class.
- What way of playing with the cards was more difficult? Why?
- Did you have time to say words?
- Did you have time to think about the word?
- What did you find difficult?
- Did you know the name of all the objects in the cards?

My notes:

Avalon

Key Competences:			
• *Learn to learn* • *Social & Civic*			
	5 - 10	30 - 40 min	13+ 5º - 6º grades

Soft skills: *Deduction capacity, Collaboration, Ethics, Negotiation, Critical thinking, Tolerance, Decision making*

Variants and steps to start playing:

- Because of its complexity, we advise you to have a separate hour in which to explain the characters and the rules and, maybe, to talk about the history of King Arthur. You can also have a trial game with the whole group in the first hour.
- In the beginning they would need help and supervision, but our older students were able to play alone after playing twice.
- An alternative for the younger ones to play could be to make mixed age teams with the older ones (where possible).
- The 8 year old pupils played it, but found it hard to remember and follow the rules. An adaptation for them could be to use only the good and bad characters and Merlin, without the other ones.
- The older pupils enjoyed the game and found strategies to play in both roles. We could see non verbal communication, deduction capacity, critical thinking and decision making very well developed after playing this game.

Adaptations for special needs:

Students with special needs can participate in teams and play the game with the help of another assistant if it is needed. They can focus on the colors red and blue of the cards and remember the expressions of good and bad intentions.

Avalon

Discussion:

- Why do you think the winners have won the game?
- How did you feel about having to trick the others?
- What do you think are the consequences of being misled in real life?
- Did you try to cheat?
- When, why, how?
- Did you cooperate with your partners?
- How did you feel when they didn’t understand your message?
- Do you have in mind situations in which misleading somebody is harmless/is good for the moment/has bad consequences?
- Do you have examples from your life when the non verbal and verbal messages were different?

My notes:

7 ate 9

Key Competences:			
• *Science, Technology, Engineering and Mathematical*	4	5 min	7+ 2º - 6º grades

Soft skills: *Abstract thinking, resilience*

Variants and steps to start playing:

- In first primary grades, we recommend to avoid the competitive mode and play in turns so as to give time to each student to calculate and be ready to play. Furthermore, you can avoid cards with negative numbers as Maths operations are limited in these grades.
- As a variation, you can multiply and use the units of the result. In addition, you can forget the ±1, 2, 3 and put the next or the previous or you can sum all the numbers of the cards.

Adaptations for special needs:

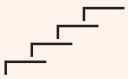
For our special needs pupils we can say the number out loud and take turns.

Discussion:

- Did you have enough time to answer?
- Were you stressed/frustrated and why?
- What did you do?
- What could you do during the class or at home to improve your performance in this game?
- How did you calculate the result?
- What would you do different next time?
- Did you fin d the strategy to calculate quicker?
- Are you better or worse than your classmates?
- How can you help them to be better?
- How can they or your teacher help you to improve?
- What variation would you include to help students to get frustrated more often?

My notes:

3x4 Klatsch

Key Competences:			
• *Science, Technology, Engineering and Mathematical*			
	4	10 min	7+ 2º - 4º grades

Soft skills: *Self control, abstract thinking, resilience*

Variants and steps to start playing:

- In 1st and 2nd grade, you can add the results of the dices instead of multiplying. In this case, create a rule for prime number results.
- In order to give time to weaker students, we recommend, after rolling the dice, the player counts 1, 2, 3 before hitting the fly.
- You can try some variations like saying characteristics instead of multiplying or saying aloud the result which they must find.
- This material can be used saying any characteristic of the fly instead of the number.

Adaptations for special needs:

For special needs pupils it is recommended to identify the numbers before starting playing. Additionally, they can play in pairs.

Discussion:

- Did you have enough time to answer?
- Were you stressed/frustrated and why?
- What did you do?
- What could you do during the class or at home to improve your performance in this game?
- How did you calculate the result?
- What would you do different next time?
- Did you find the strategy to calculate quicker?
- Are you better or worse than your classmates?
- How can you help them to be better?
- How can they or your teacher help you to improve?
- What variation would you include to help students to get frustrated more often?

My notes:

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