



Work package nº3 - Training, guidance and pilot activities for marginalised students

Result 6: Hybrid (blended) training activities for 334 marginalised and low-skilled students from ES, BG and TR

CONSOLIDATED PILOT FINDINGS AND USABILITY REPORT

of the for the Erasmus+ project in School education

“Game based learning to validate pre-employment skills and to foster digital competence of low skilled and marginalized students to foster better transition to the labour market”

Project number: 2022-1-ES01-KA220-SCH-000085050

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I. General framework of the conducted pilot implementation phase in Spain, Bulgaria and Turkiye

1. Period of the actual piloting phase – 01.02.2024 – 30.09.2025

2. Pilot sites:

a. SPAIN

- i. Virgin of Lourdes School (Majadahonda)
- ii. IES Francisco García Pavón (Tomelloso)
- iii. Fundación Alapar
- iv. Proyecto Compas Madrid

b. BULGARIA

- i. 94 SU “Dimitar Strashimirov” Sofia, Bulgaria
- ii. Private Business School “The Talents”, Plovdiv, Bulgaria

c. TURKIYE

- i. Şehit Recep Şahin Mes.Tek.Anadolu Lisesi
- ii. Havza Mesleki Ve Teknik Anadolu Lisesi

3. Stages of the piloting:

- a. Pre-assessment of pre-employment skills via structured questionnaire to evaluate the stage of existing knowledge (conducted in February 2024)
- b. Analysis of the results and selection of the participants to take part in the piloting phase (1-15 March 2024)
- c. Induction trainings of teachers (January-February 2024)
- d. Introduction sessions with marginalised students with support by parents, resource teachers and pedagogical counsellors (15 March 2024 – 15 March 2025)
- e. Blended learning process and sessions (15 March 2024 – 1 October 2025)
 - i. **Sessions** - At least 6 months organization (one semester) of training activities in hybrid format (digital and physical). Each student has at least 2 sessions per week (in 7 weeks) with teacher and pedagogical counsellor as well as minimum 4 group sessions for the entire class).

- ii. **Modes of training implementation** - presentation of purposes of the pre-employment training, practical activities, completion of tests (provided in Result 7 Pre-employment guidance handbook), discussions, role-play games to simulate different job market situations, questions and answers, validation of learning outcomes via serious game “It’s time to work”.
 - iii. **Modes of practical implementation** - learning by doing, learning by observing peers' interaction, group activities, study visits to different institutions
- f. Individual sessions to clarify specific topics (March – October 2025)
 - g. Mid-term monitoring reviews (May 2024, November 2024, March 2025, September 2025)
 - h. Continuation of individual sessions (April 2024 – September 2025)
 - i. Final sessions and feedback gathering (September – October 2025)

4. Total involved participants:

- a. Teachers – **237** (initially planned 80)
 - i. Spain – 94
 - ii. Bulgaria - 65
 - iii. Turkiye - 78
- b. Marginalised students – **334** (initially planned 80)
 - i. Students with special needs with disabilities and learning disorders – **60** in total
 - 1. Spain – 20
 - 2. Bulgaria – 20
 - 3. Turkiye – 20
 - ii. Disadvantages (ethnic minorities, low skills, potential dropout, deviant behaviour, disadvantaged woman due to early pregnancy) – **177** in total:
 - 1. Spain – 74
 - 2. Bulgaria – 45

3. Turkiye - 58

5. Monitoring committees

- a. Representatives of the staff of project partners - 10
- b. Representatives of monitoring committee (NAB) – 20
- c. Representatives of parents, guardians and family members of the participating students – 40

6. Profile of the marginalised students /students with special needs involved:

- a. Age 14 to 18 years old
- b. Specialties of their profile:
 - i. “Entrepreneurship”
 - ii. “Design and production of clothes”
 - iii. “Logistics” (courier)
 - iv. “Economics and management”
 - v. “Tourism and organisation of free time”
 - vi. “General school subjects”
- c. Type of special needs:
 - i. Disabilities – up to 30% reduction of employability including physical and sensory impairments, internal (medical) diseases, learning disorders – Autism spectrum disorder, ADHD, Dyslexia, Dyscalculia, Dyspraxia.
 - ii. Disadvantages - Ethnical minorities communities – Roma, Latin America students, refugees, immigrants; Woman, who are back to school due to early pregnancy, Students who are returned to school after deviant behaviour activities.

7. Profile of teachers involved:

- a. Age average: 27 - 55
- b. Professions: teachers (Maths, Civil education, Entrepreneurship, Economics, Management, pedagogical counsellor, principals)
- c. Proven digital competences to work with online platform and tools
- d. Experience on working with students with special needs

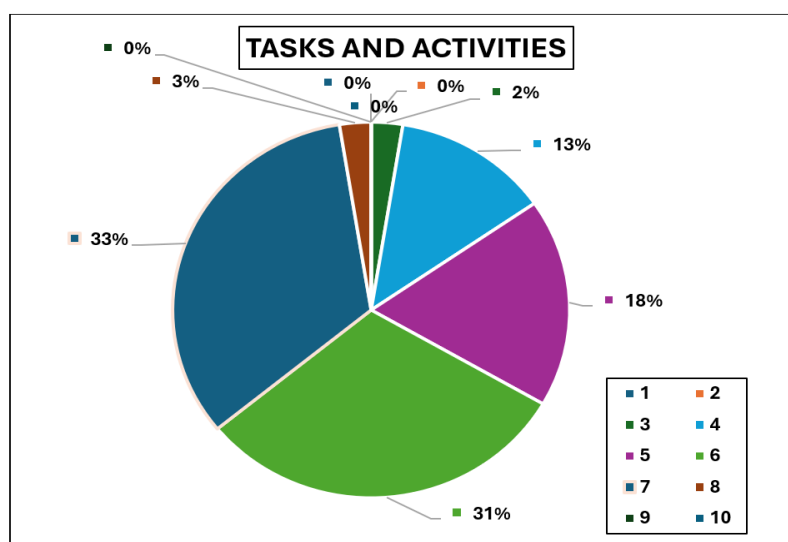
- e. Knowledge about conducting non-formal training modalities
- 8. **Selection process** – based on internal procedure at the institution in accordance with the project criteria explained in the project application form.
- 9. **Proofs for piloting** – list of participants (induction and final sessions), photos from both target groups, testimonials via interviews , completed Annex I – Students’ observation form and Annex II – Teachers’ observation form and Star outcomes model for evaluation of key and transversal competences improvement.

II. Analysis of the findings according to the results of involved students and teachers

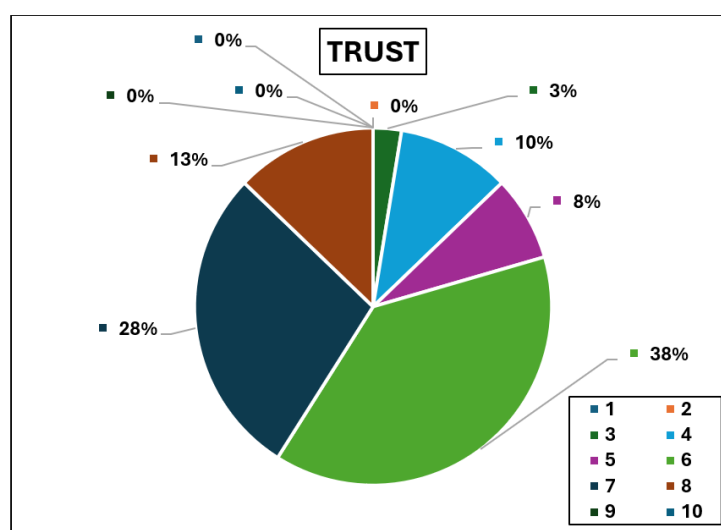
The consolidated diagrams below are presenting the collected data from the three pilot sites – in Spain, Bulgaria and Turkiye. The results were collected by the teachers, who have facilitated the piloting process.

Total number of participants/respondents: 337 marginalised students

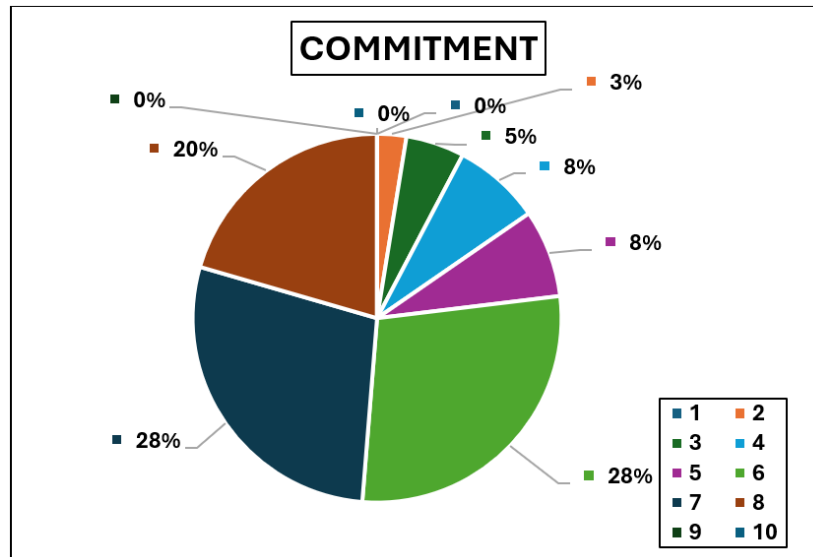
Legend of the scores: 1 lowest level – 10 – highest level



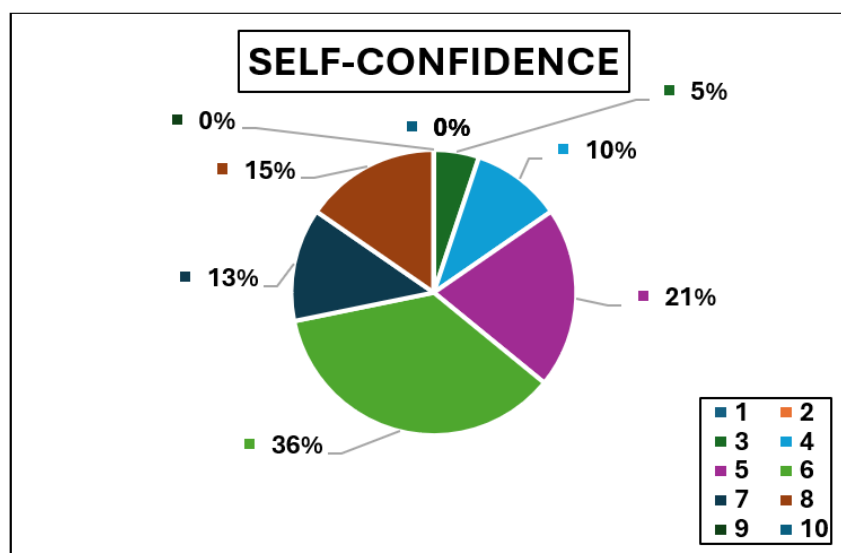
As we can see from the above diagram, 92% of the respondents have answered between 7 to 10 points which shows high level of participation and commitment of the used approach.



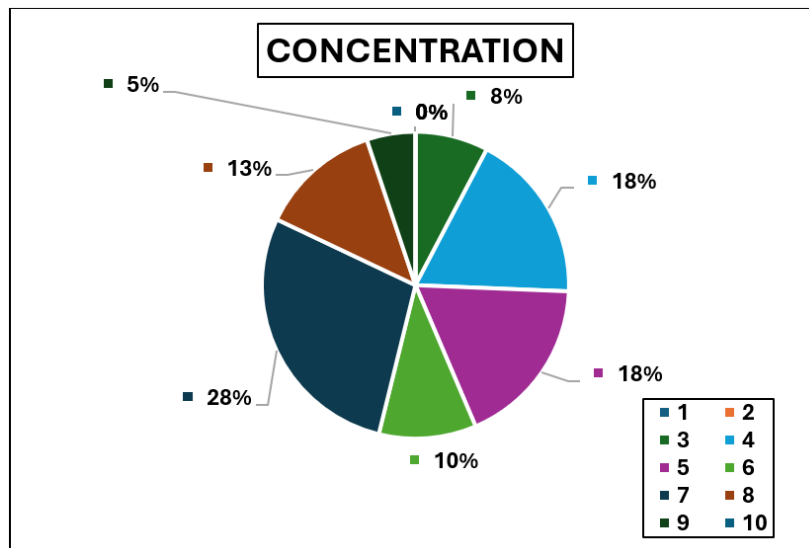
From the above diagram, it is visible that 74% of the students expressed trust during the realisation of the piloting phase. This result is considered as expected, because almost all of the participating students have not participated in such or similar trainings before and they are a bit sceptical from the unexpected challenges.



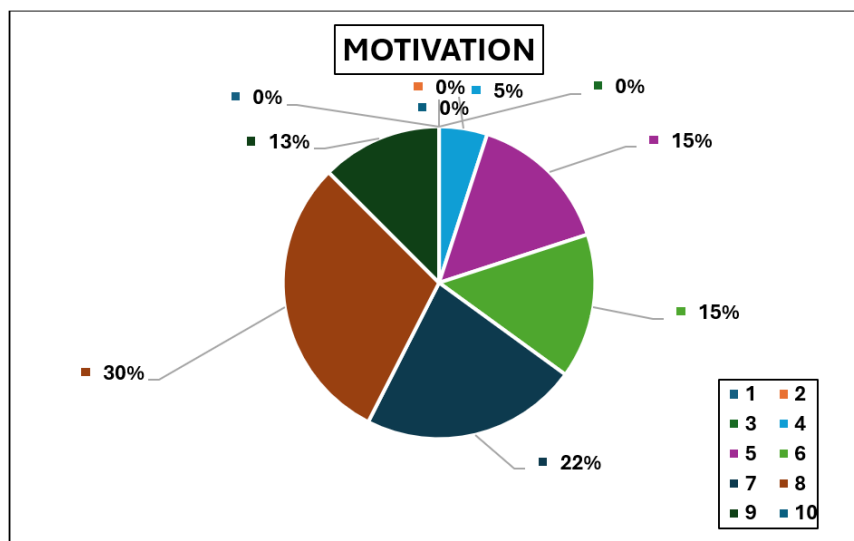
It is obvious that more than 84% of the participants were fully committed to achieve the goals of the training and the targets in the game.



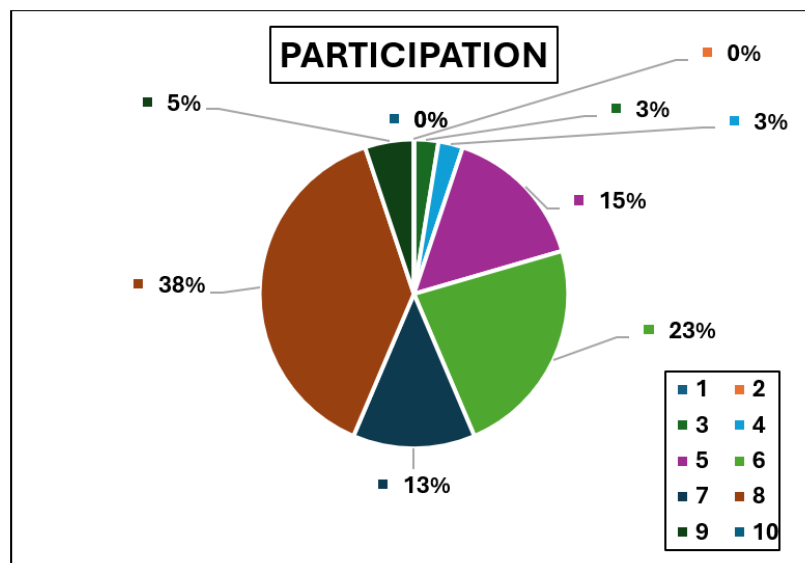
High level of self-confidence is evident from the participants, which have not been seen in any other existing school activities as reported by the teachers.



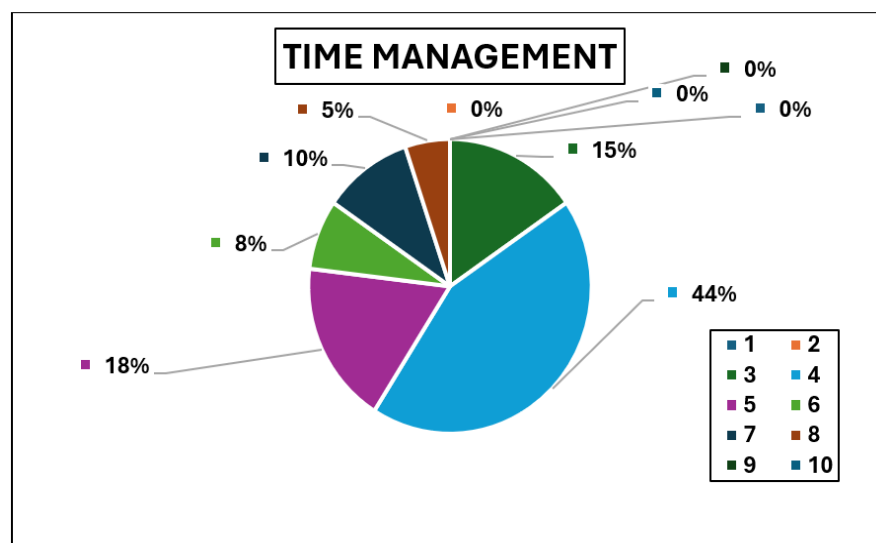
It is seen from the above diagram that students have expressed high level of concentration during the piloting activities – during pre-employment sessions and with the interaction of the serious game.



Higher level of concentration led to highest level of motivation of the students to achieve the goal. The reasons are mainly due to the fact that the focus on their strengths and given opportunity to use a game in the school setting was received as an award by them. The goal achievements were higher than expected and the reason was the extended level of motivation also by the teachers, who constantly encouraged their pupils.

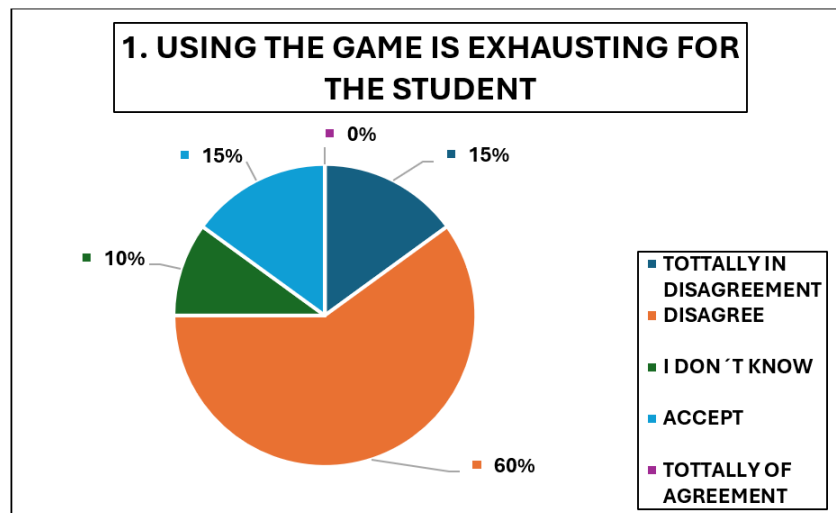


The level of the participation was also high. The diagram above shows that more than 94% of the respondents maintained their participation throughout the piloting course during the semester.

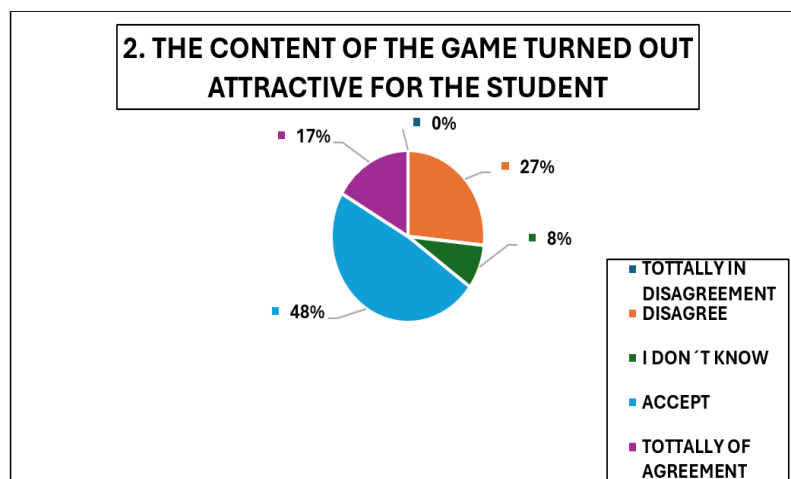


Time management is still a challenge for the students at the school age, no matter if they have a disability or not or if they are representing a marginalised group of the community. Overall the school systems in Europe still are struggling from training on proper time management, which needs to be improved.

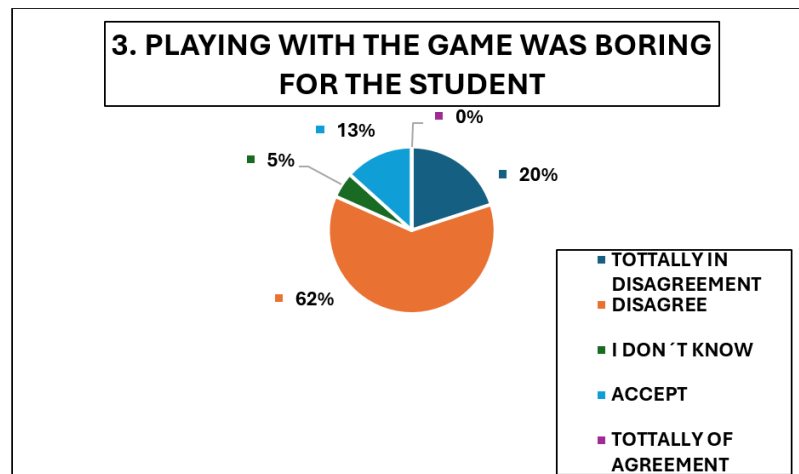
The below results directly shows the commitment of the participating students with the interaction of the serious educational game “It’s time to work”, developed by the project partnership.



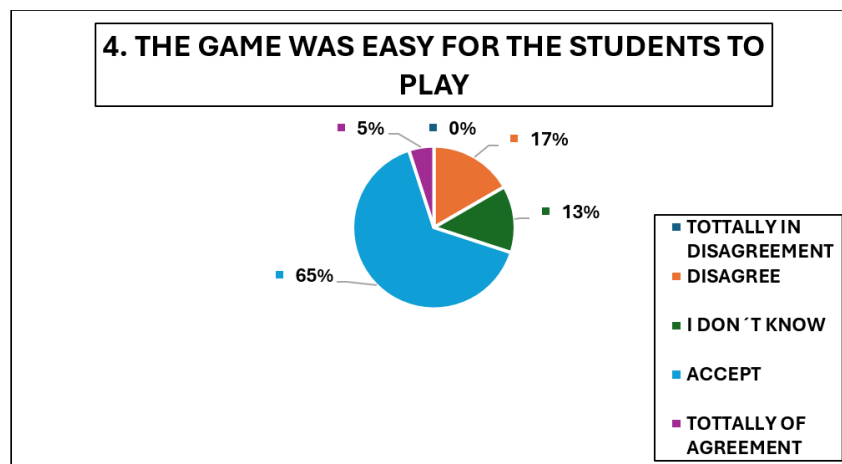
75% of the respondents shows agreement that the game is not exhaustive for them. For the rest of 15%, the result is due to the fact that they have specific disabilities (Autism spectrum disorder, Dyslexia, Dyscalculia, Dyspraxia, Asperger syndrome), which normally makes them exhausted in a short time – something that we cannot overcome with a single project, but still – there is a potential for improvement which has been shown throughout the sessions by these students.



From the figure above, it is visible that the game content is attractive for the majority of the respondents (94%).

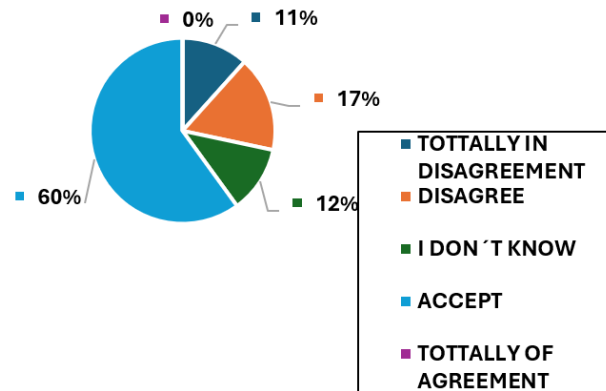


Overall, the students agreed that the content of the serious game is not boring and they have had enough stimulus to keep their attention as also observed by the teachers, who monitored students' performance.



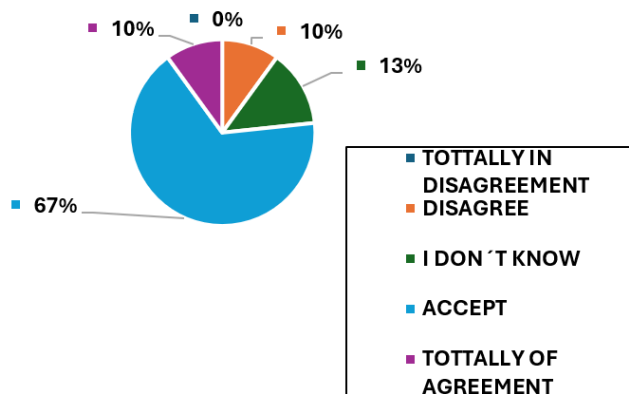
The figure above confirms that the prepared scenarios of the four levels of the game is appropriate and easy to understand by the students. They can navigate easily and intuitively to discover what they need to do.

5. THE ACTIVITIES IN THE GAME WERE PREDICTABLE FOR STUDENTS



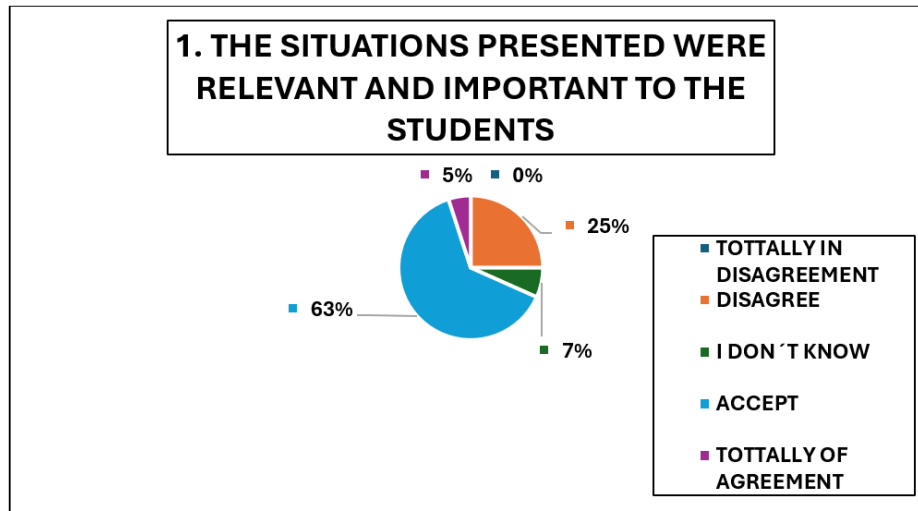
Important outcome from the above figure shows that the predictable scenarios help students to continue being motivated and to follow up on the next activities, which the game requires.

6. THE STUDENTS USED THE GAME VOLUNTARILY

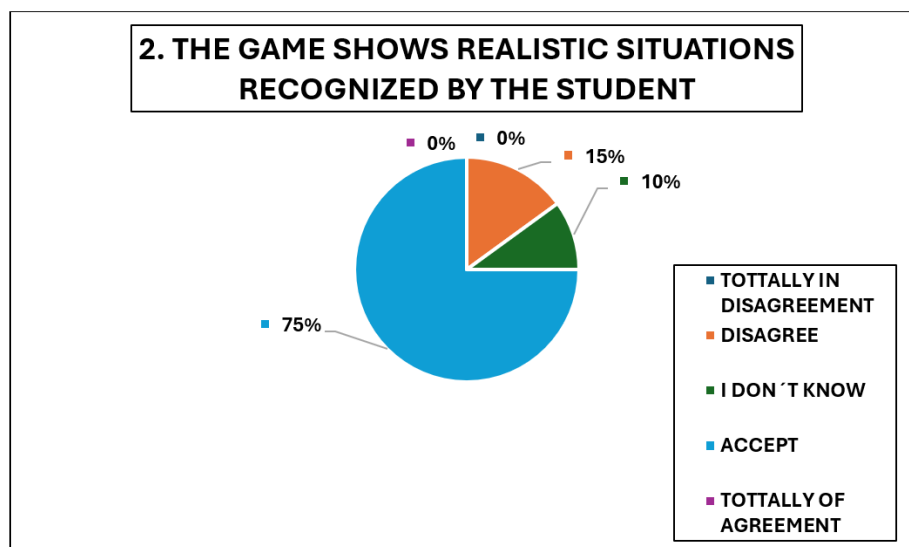


The above diagram shows that the participation of the students was on voluntarily basis and that they do not need further encouragement or compulsory necessity of accomplishment of the game participation.

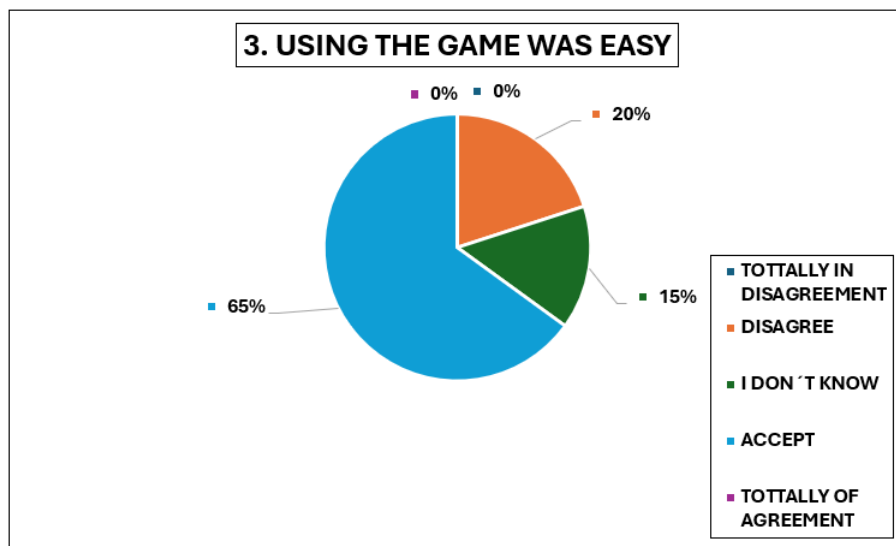
The next group of questions shows the **summary of the results of the evaluation of teachers** about the interaction by the students with the serious game.



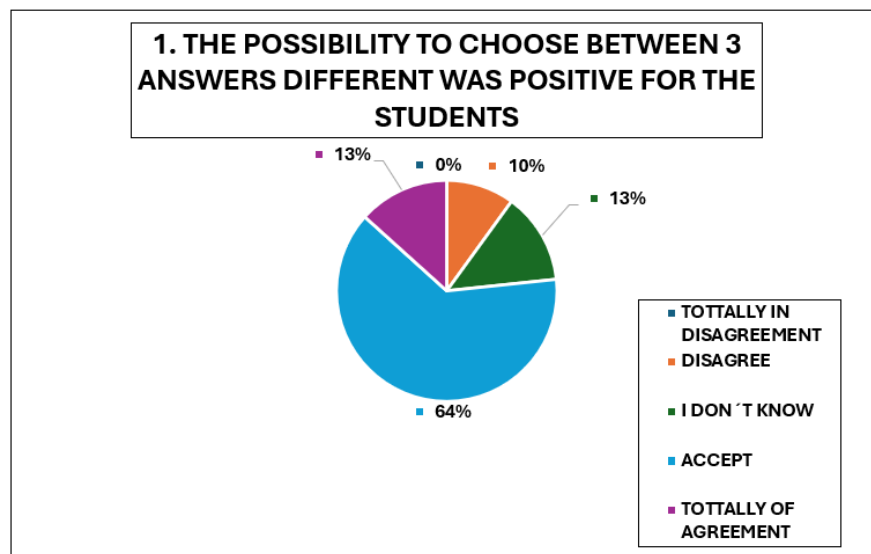
The above figure shows that teachers agreed with the fact that the presented situations in the game scenarios are important and relevant for their pupils.



From the above figure we can conclude that our game shows realistic situations, which are easily to be recognised by the students.

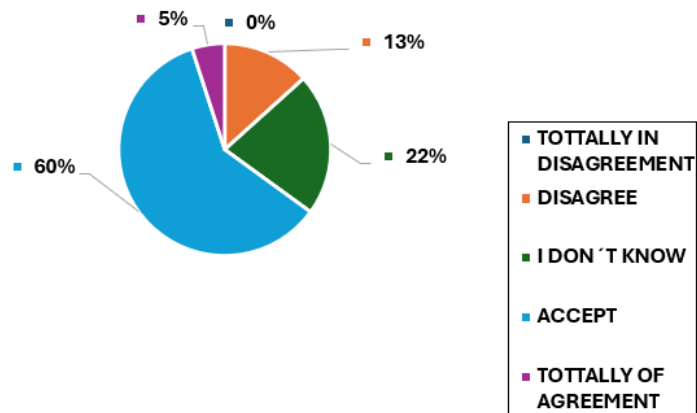


It is obvious from the above figure, that the using of the game as validation tool and additional didactic approach was easy for the teachers.



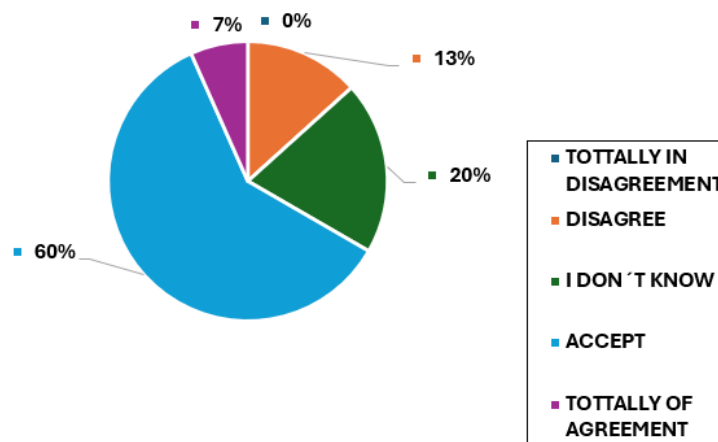
The teachers agreed that the possibility given by the game to choose among 3 possible options was positively assessed by the students. In this case there was not failure but rather experience of different options based on particular behaviour or selection of option. In such way, the students were confident that they are not again judged but rather encouraged to explore different perspectives.

2. THE CONTENT AREAS ARE DIFFERENT BETWEEN LEVELS FOR HIM/HER



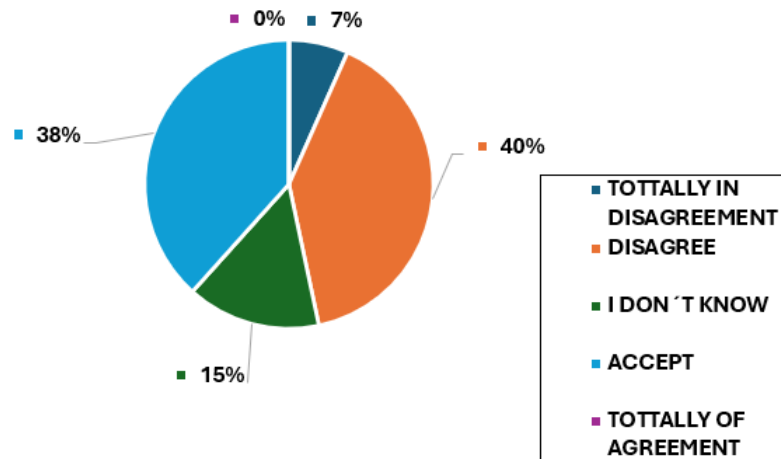
As we can see from the figure above, the content areas of the game have been distinguished by the students. They have appreciated the fact that each level is advanced to the overall goal.

3. IT WAS EASY FOR HIM/HER TO FOLLOW THE ACTIVITIES OF THE GAME?



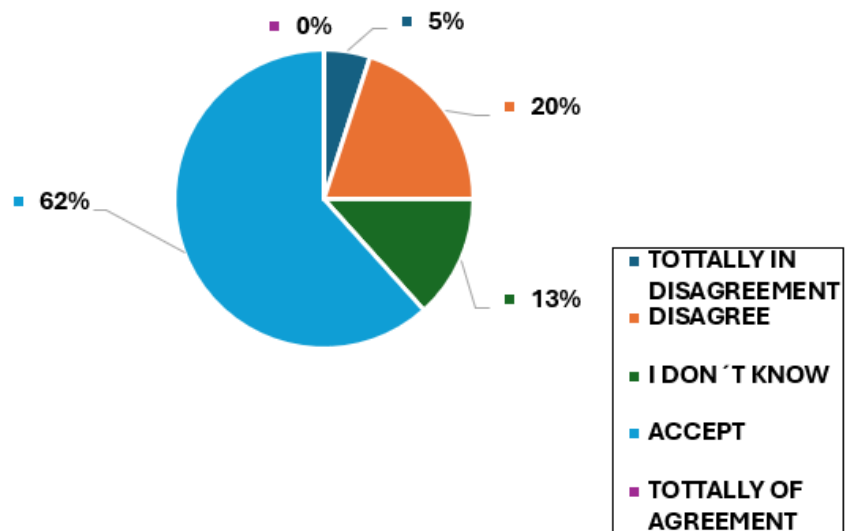
Comparing to the above results, possessed by the students, here teachers also agreed that it was easy for students to follow the game' activities. So additional contribution or clarifications by the teachers were not necessary in the majority of the pilot cases.

4. THE NOISES OR MUSIC USED IN THE GAME, THEY WERE ANNOYING TO THEM

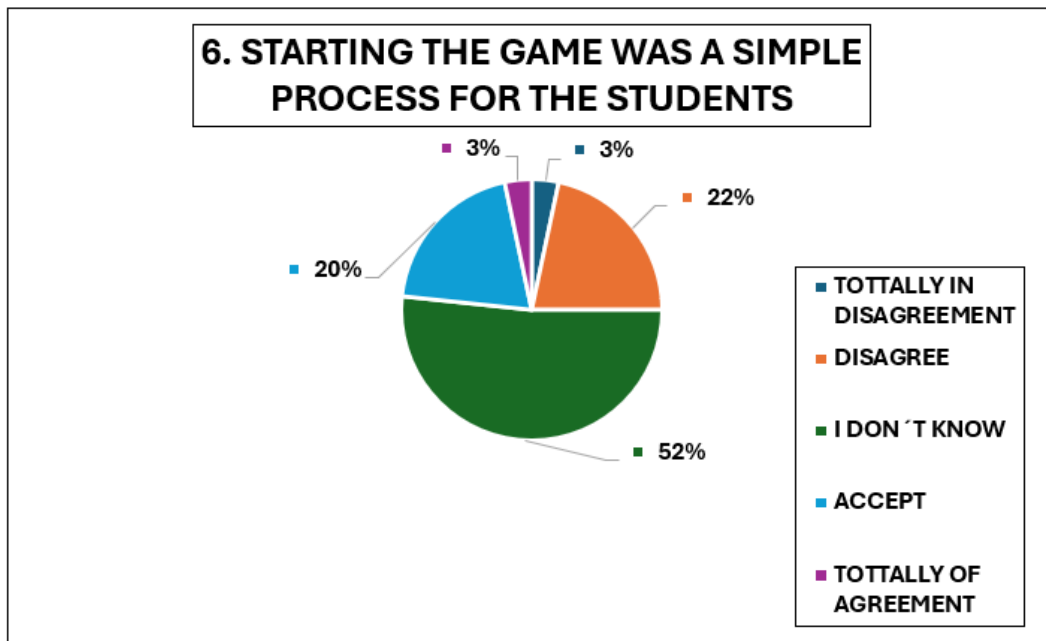


The sound effects of the game were not evaluated as annoying. This was particularly important especially having in mind that sounds and music sometimes is annoying for students with some disabilities. However, here we can't see such problem.

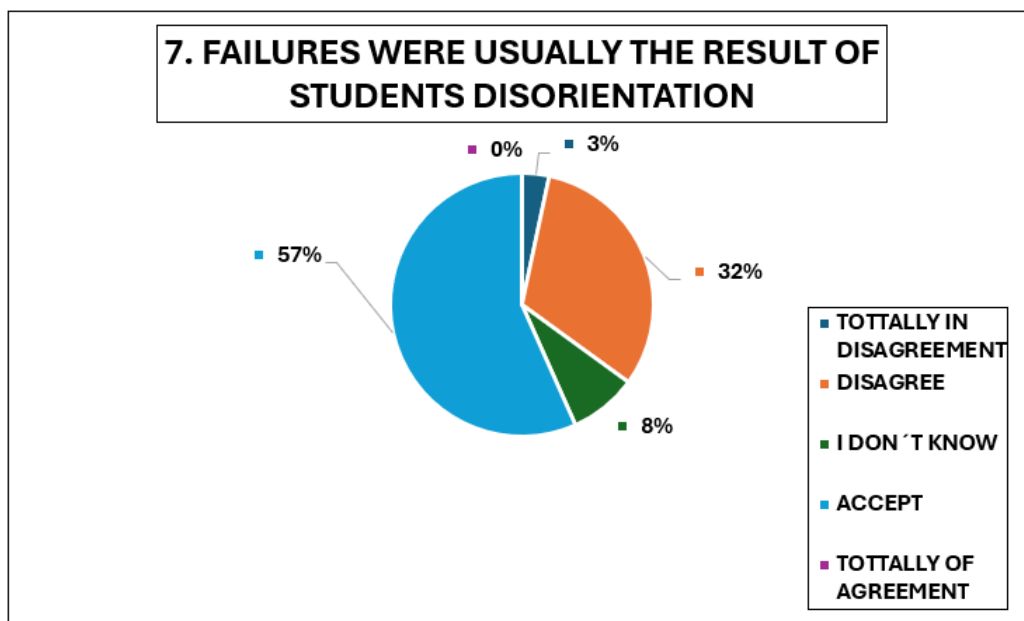
5. THE SPEECH USED WAS CLEAR AND UNDERSTANDABLE FOR THEM



From the above figure, we may conclude that the used narration of the game was suitable for the participating groups of students.

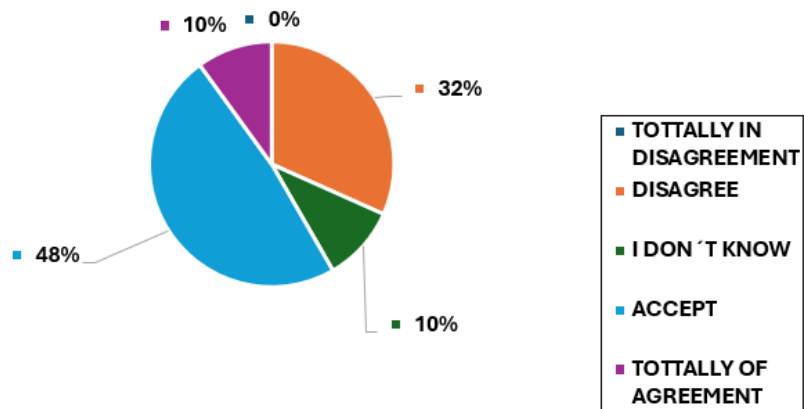


It is obvious that there were not any technical difficulties for starting the game.



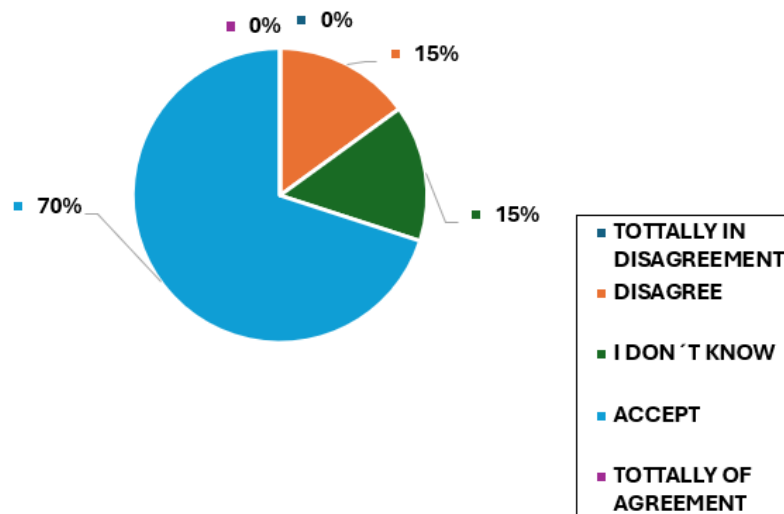
From the above figure, we may conclude that minor failures were just simple results from distraction of the students – for example incidentally closure of the game or hurry up for next classes or intermissions between classes.

8. SAVE, CLOUSE THE GAME AND EXIST TO THE FINISHING IT WAS EASY



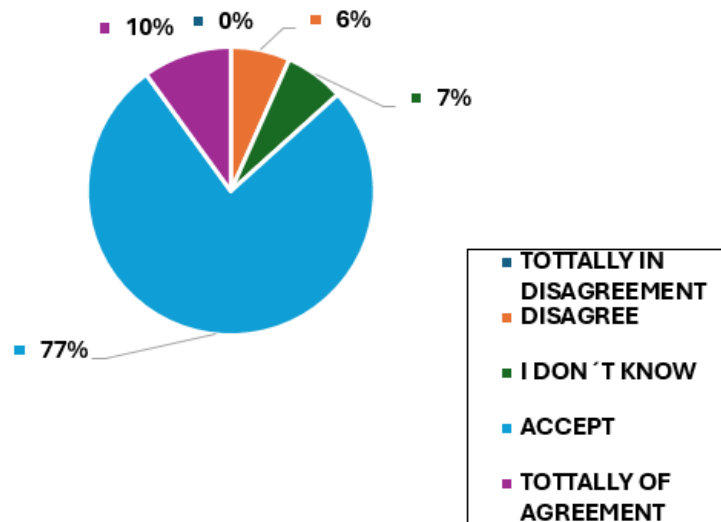
From the figure above, it is obvious that the students understood easily how to close the game and how to store their recent level results, having in mind this functionality of the game.

1. THE APPEARANCE OF THE GAME IS REALISTIC



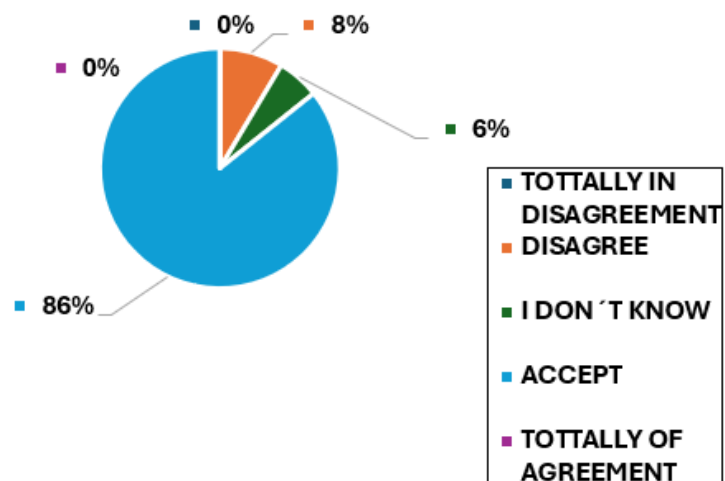
Participating teachers agreed that the appearance of the game is realistic and the overall square concept of the avatars is suitable for these students, because they have already experience with other square games for fun like Minecraft and Scratch.

2. THE APPEARANCE OF THE GAME PLEASES THE STUDENT



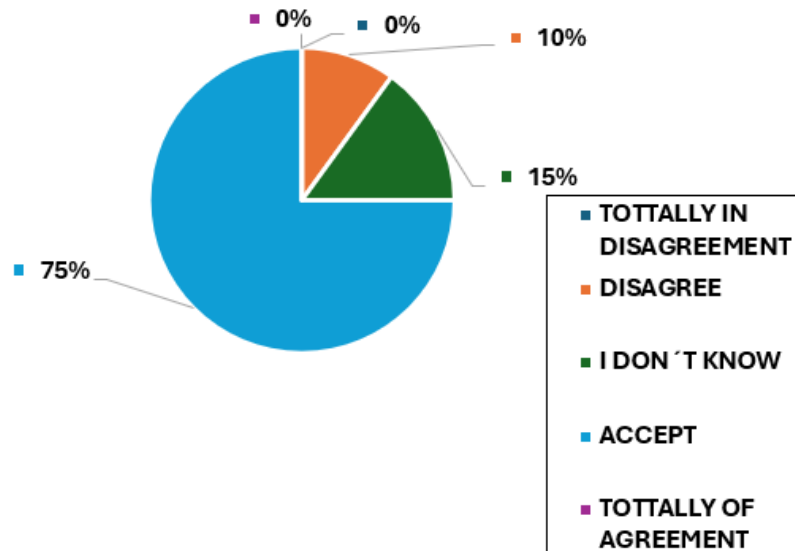
87% of the teachers agreed that the students were pleased with the game scenarios and tasks.

3. THE APPEARANCE OF THE GAME WAS APPROPRIATE FOR THE GOAL THAT THIS STUDENT WAS PURSUING

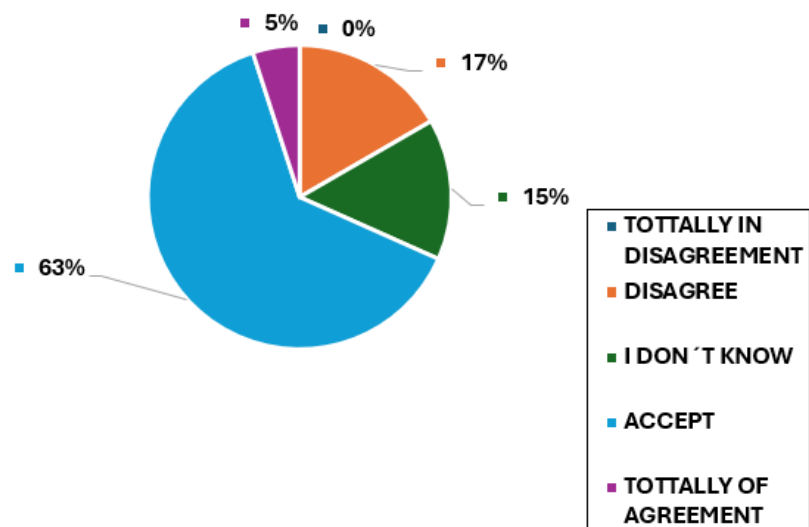


The results on the figure above shows that teachers agreed (92% of respondents) that the developed serious game is a suitable additional tool for the validation of pre-employment skills by their students.

4. THE IMAGES WERE EASY TO RECOGNIZE FOR THE STUDENT

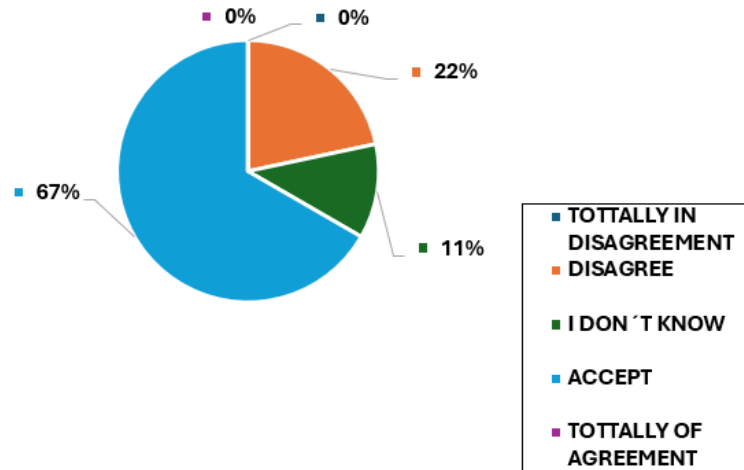


5. THE ILLUSTRATIONS AND THE BACKGROUND USED THEYTURNED OUT TO BE USEFULL



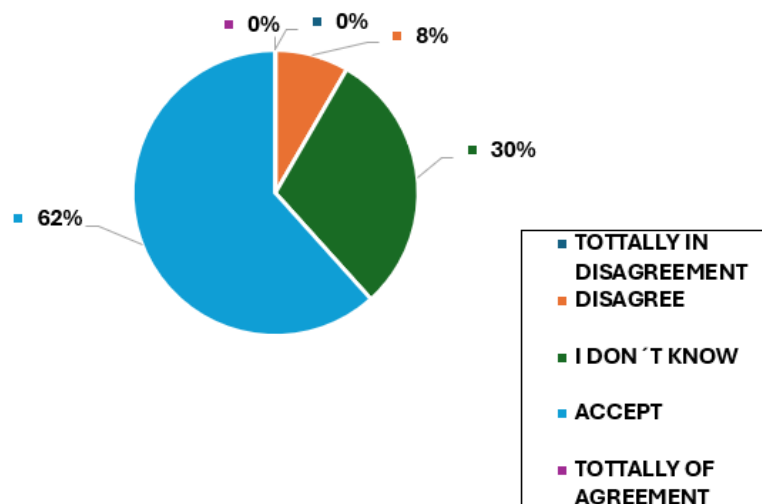
Both diagrams above shows that the illustrations, icons and symbols in the game environment have been accepted as realistic by the students.

6. THE CONNECTION BETWEEN THE IMAGES AND THE SARES REPRESENTED IN THEM, IT WAS UNEQUIVOCAL



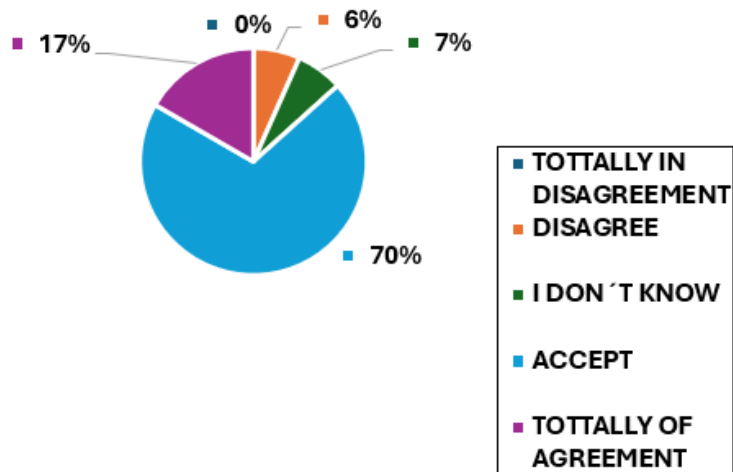
From the figure above, we can conclude that the connection between situations in the game have been accepted as realistic in the true life by the students. This shows that they can easily replicate these situation into a life time situations.

7. THE FAILURES WERE USUALLY THE RESULT IS THAT STUDENTS DO NOT THEY UNDERSTOOD THE INSTRUCTIONS



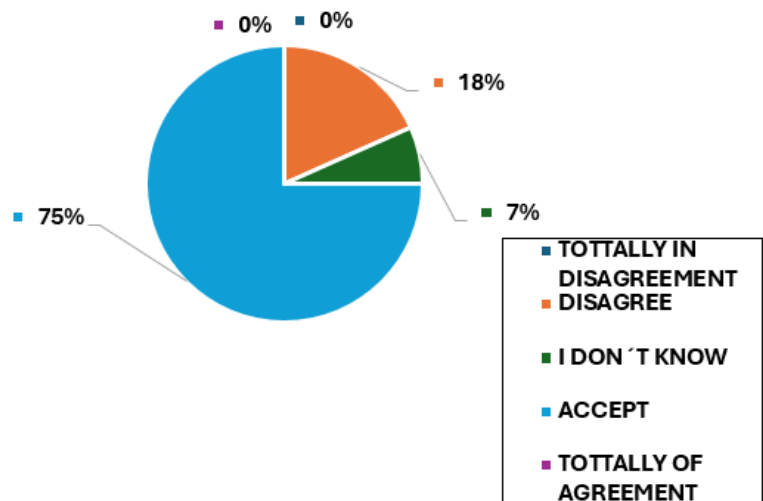
Overall, we can conclude that the teachers agreed, that students are able to follow instructions more easily at the game environment, rather than in any other type of activity in the classroom.

8. THE GAME WAS RICH IN STIMULI (VISUAL AND AUDITORY) FOR THE STUDENT



It is important, that teachers appreciated the stimuli, both visual and auditory, which the game provides for the students with special needs.

9. THE SCREENS OF THE GAME WERE DETAILED TO THEM



The teachers agreed that the screen views of the game were enough detailed for the students. Those, who tested the game in mobile phone with small screen, have experienced some difficulties, but we should not forget that the mobile version of the game is just an extra result. The desktop version was played in enough big screens, so this cannot be considered as an issue.

III. Usability conclusions

The highest scores were found in indicators related to self-confidence, confidence, and practical task performance, suggesting a good level of student involvement. On average, the mean scores are around 8.5 out of 10, which reflects a moderate improvement in the competencies after using the game. The indicators with the largest variability (standard deviation) were participation and sustained attention, suggesting that motivation and interest levels differed among students. The items analysed include variables such as: confidence, concentration, commitment, tasks and activities, self-confidence, and time management. The highest scores are concentrated on the indicators of self-confidence, confidence, practical tasks, suggesting good participant engagement. Overall, the game was engaging for students. Most students fell into the "Agree" or "Strongly Agree" categories when asked if the content was interesting. The dynamics helped keep their attention. Few students reported that the game was boring or tiring, which is caused by their stage of disability. The game successfully sparked interest and maintained adequate motivation throughout its use. Ease of use and gameplay experience as significant number of students found the game easy to use. The ability to choose between multiple responses was seen as a positive aspect that favoured participation. Students perceived the content related to life skills and job readiness as useful. It was observed that the game did allow for reflection and learning about: How to present oneself as a candidate; How to adapt a CV; How to make decisions in real-life work situations. The game fulfils its educational purpose; it's not just entertaining. The screens and navigation were generally sufficiently clear.

The offered game-based learning to validate pre-employment skills and to foster digital competence of low-skilled and marginalized students definitely fosters better transition to the labour market for these marginalized students. It used interactive elements, challenges, and rewards, making learning more enjoyable and effective. Participating students developed important skills like problem-solving, critical thinking, teamwork, and decision-making, which are valuable in the job market. By using our game technology, these students became more comfortable with digital tools and platforms, increasing their attractiveness to potential

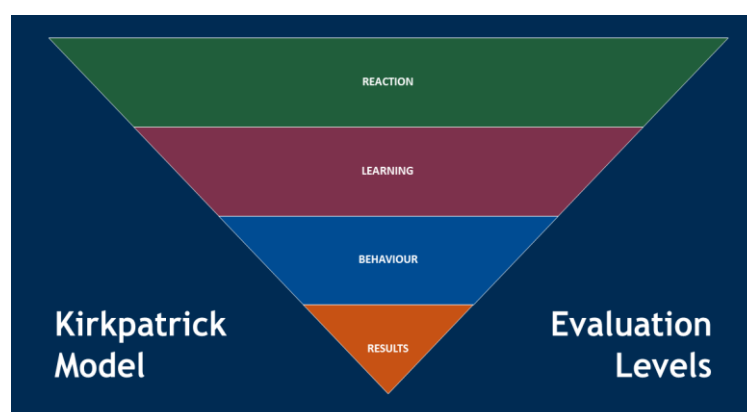
employers. The training adapted to individual student needs and progress levels (4 levels of the game), ensured everyone received the support they needed to succeed. The Game allowed students to practice and learn from "mistakes" without real-world consequences, reducing the fear of failure. They have received quick feedback, helping them understand their strengths and areas for improvement. Their success in game-based learning boosted students' confidence, making them more likely to take on new challenges and pursue job opportunities. The skills learned are applicable to real-life situations. Overall, this training prepared marginalized students for the workforce by enhancing their skills, boosting their confidence, and fostering digital competence.

Training activities were tailored to address real-world workplace scenarios, which resonated well with participants. This practical relevance likely increased their satisfaction, as they could see the direct application of the skills they were acquiring. Significant improvements were observed in participants' pre-employment skills, including technical proficiency, problem-solving abilities, and digital competence. These gains likely contributed to a higher level of satisfaction with the training. The blended training activities likely boosted participants' confidence in their abilities.

The Pre-employment Support & Guidance Handbook likely garnered high levels of satisfaction among teachers and pedagogical counsellors due to its comprehensive and practical nature. The handbook was likely praised for its clear and concise format, making it easy for teachers to navigate and implement the guidance materials. This user-friendly design contributed to a high level of satisfaction. Teachers appreciated the structured approach provided by the handbook, which outlined step-by-step processes for assessing student capabilities, developing skills, exploring career options, and practicing job seeking skills. This structure simplified the implementation process and enhanced the overall effectiveness of the guidance. Teachers experienced satisfaction from witnessing tangible improvements in their students' knowledge, skills, and behaviours. The handbook's guidance directly translated into measurable outcomes, such as improved CVs, successful interviews, and better job search strategies. The interactive and practical nature of the handbook increased marginalised student engagement, making the learning process more enjoyable and effective. Engaged

students are more likely to retain and apply the skills they learn, which reflects positively on the teachers' efforts. Participating teachers felt a sense of professional growth and development as they implemented the handbook's strategies. The opportunity to hone their skills in guiding students through pre-employment preparation enriched their teaching practices and expanded their professional repertoire. Pedagogical counsellors likely appreciated the holistic approach taken by the handbook, which addressed not only hard skills but also soft skills and career exploration. This comprehensive guidance aligns with the multifaceted needs of marginalized and low-skilled students. The handbook provided tailored strategies for different types of students, allowing counsellors to customize their guidance based on individual needs and circumstances. This flexibility enhanced the counsellor's ability to provide effective support. The handbook's emphasis on measurable outcomes, such as improved job search skills and successful job placements, allowed counsellors to quantify their impact. This tangible evidence of success boosted their satisfaction. Both teachers and pedagogical counsellors appreciated the collaborative nature of the work package, which fostered teamwork and shared responsibility in supporting students. This collaborative effort enhanced the overall satisfaction of the team. The broader community impact of the work package, including improved employability of marginalized and low-skilled students, likely contributed to a high level of satisfaction. Knowing that their efforts were making a difference in the lives of students and the community at large was rewarding for all involved.

INTERPRETATION USING THE KIRKPATRICK MODEL



Reaction:

Students showed interest and enjoyment, and they were actively engaged in the tasks.

Learning:

There were measurable improvements in cognitive and attitudinal aspects, especially in confidence and commitment.

Behavior:

There is partial transfer of learning: students are beginning to apply skills such as teamwork and time management, but continued reinforcement is recommended.

Results:

The game achieves its educational purpose by promoting reflection on the working world. However, it would be beneficial to strengthen the practical components, such as CV writing and interview preparation also in real environment with the participation of supported employment consultants who are external for the schools.

IV. Reached impact

Our project has proven its significant impact on various stakeholders, including participants, participating organizations, target groups, and other relevant stakeholders.

Participants (marginalised students as dully explained above) gained valuable pre-employment skills through game-based learning, which improved their readiness for the job market. The project also significantly boosted their digital competence, equipping them with essential skills needed in today's digital world. Engaging in game-based learning activities increased their confidence and motivation, making them more likely to seek and secure employment. Additionally, these 334 students had opportunities to network with professionals and peers, broadening their connections and potential career prospects.

The participating organizations (project partners and pilot sites schools) enhanced their capacity to deliver innovative career guidance programme, leveraging game-based learning methodology. Their involvement in the project raised the profile and reputation of these organizations, positioning them as local leaders in education and workforce development. The project fostered new collaborations and partnerships, opening doors for future joint initiatives and funding opportunities. Furthermore, they have developed new resources and tools (results) that can be used beyond the project's duration, ensuring a lasting impact.

Involved policymakers from ministries of education, local authorities, school syndicates etc. gained insights into effective strategies for addressing youth unemployment and promoting validation of pre-employment competences including enhancement of the digital literacy of these marginalised students, which led to future policy decisions for the improvement of inclusive education in partners' countries. The involved educational institutions benefited from the project's findings, incorporating innovative teaching methods via the desktop and mobile game and curricula for career guidance via the toolkit to better prepare students for the workforce upon graduation. We have raised also the awareness of the employers, who gained access to a pool of skilled and digitally competent candidates, benefiting from the

project's focus on preparing individuals for real-world job requirements. Community organizations working with marginalized populations received valuable resources and best practice on the implementation (via Exploitability report), enhancing their ability to support vulnerable individuals and their families.

Overall, the project's holistic approach to skill development and digital competence enhancement had a transformative effect on participants, participating organizations, target groups, and other relevant stakeholders. It not only equipped individuals with the necessary tools to succeed in the job market but also contributed to broader societal goals of reducing unemployment, promoting social inclusion, and fostering sustainable economic growth.

Local Level

At the local level, the project directly impacted on the skills and employability of 334 low-skilled and marginalized students. Through game-based learning, they have acquired practical skills that are immediately applicable in local job markets. By equipping individuals with the necessary skills, the project contributed to local economic growth. Skilled workers are more likely to find stable employment, boosting local economies and reducing unemployment rates. The project fostered stronger ties between educational institutions, community organizations, and local businesses. This collaboration led to more integrated and supportive local ecosystems for job seekers. Local awareness campaigns and workshops educated local communities about the importance of digital competence and pre-employment skills, encouraging wider adoption of these principles.

Regional Level

Findings from the project piloting phase influenced regional policies aimed at improving education and employment opportunities. Policymakers from National advisory boards incorporated best practices and recommendations into regional plans, leading to more effective interventions. The project helped the alignment of the regional education systems with the demands of the local job market. This alignment ensured that graduates possessed the skills required by regional employers, reducing skill gaps, which has been validated via the

serious educational game. Regional networks of educators, trainers, and employers were expanded, allowing for the exchange of know-how and educational resources across regions.

European Level

The project contributed to the body of European best practices in education and workforce development. Its innovative approach to skill validation and digital competence was shared widely across Europe (see below section Dissemination). The successful implementation of the project opened doors for additional initiatives to transfer the project results to marginalised adults (18+). The project's findings influenced broader strategies for tackling youth unemployment and promoting digital literacy across member states, which was justified during presentations and European and International dissemination events. Our project fostered cross-border collaboration among European partners, leading to the development of transnational solutions for common challenges in education and employment.

International Level

The project gained international recognition for its innovative approach to skill development and digital competence. We have demonstrated the project results to Latin America international conferences and forums, where it attracted attention from other school stakeholders. Since our project offered sustainable solutions to global issues such as youth unemployment and digital exclusion - its methodology and tools can be adopted by organizations worldwide, contributing to global workforce development.