

## REPORT OF RESEARCH

### FIRST REPORT OF THE RESEARCH IN LITHUANIA

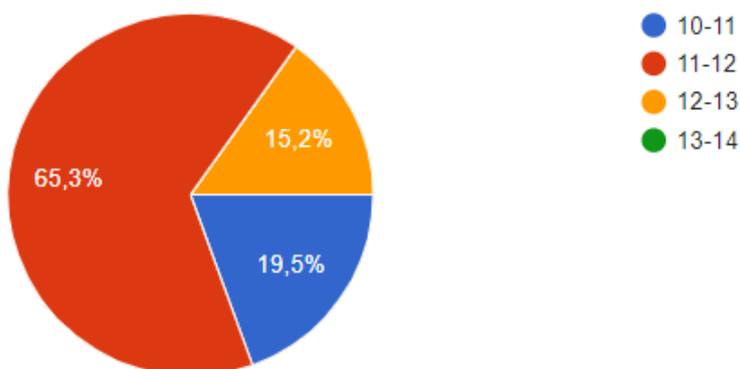
#### INTRODUCTION

The research was carried out using a survey posted on the Internet. The target group were children 10-14 years old. The aim of the study was to find out the opinions of the respondents in terms of developing a video game and improvement offer for children in the moral education and STEAM development. The aim was also to learn about a set of values that form the foundation of children's character in order to understand how they guide their decisions and how they act in moral dilemmas. 303 students took part in the study. The survey was developed in an electronic version and sent to three schools by sending a link to the survey. The results of the obtained data are as follows.

#### I. SOCIO-DEMOGRAPHIC DATA

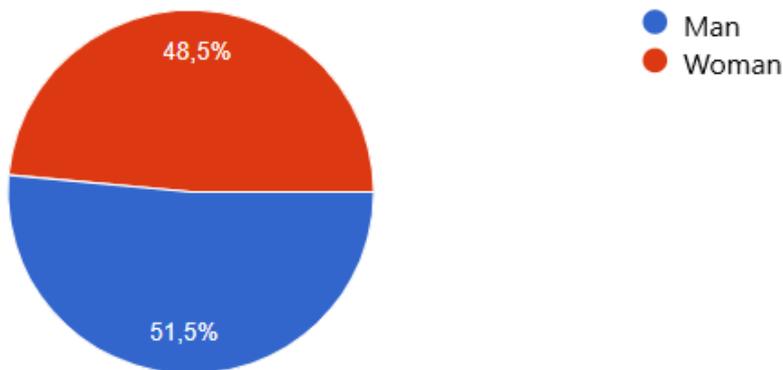
##### 1. Age:

The most numerous groups were those aged 11-12 (65,3%), the second main group of respondents were on age 10-11 (19,5%) and 12-13 (15,2%).



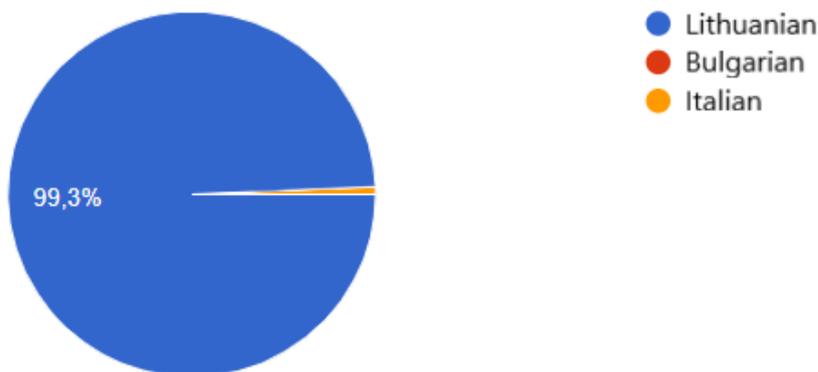
## 2. Gender

Among the 303 respondents, there were more men 51,5% than women 48,5%.



## 3. Nationality

All respondents were Lithuanian nationals.



## II. VALUES

### 4. "Values" for you are...

Most of the respondents indicated that value for them is central characteristic of human (46,5%), and ordered by relative importance (13,5%), and beliefs link to emotion (12,9%). Even 14,2% answered that they do not know, what is "values". 12,9% chose the answer other and wrote: family (24), friends, relatives (12), kindness, goodness (4), love, loving person (7), animals (2), honesty (2)



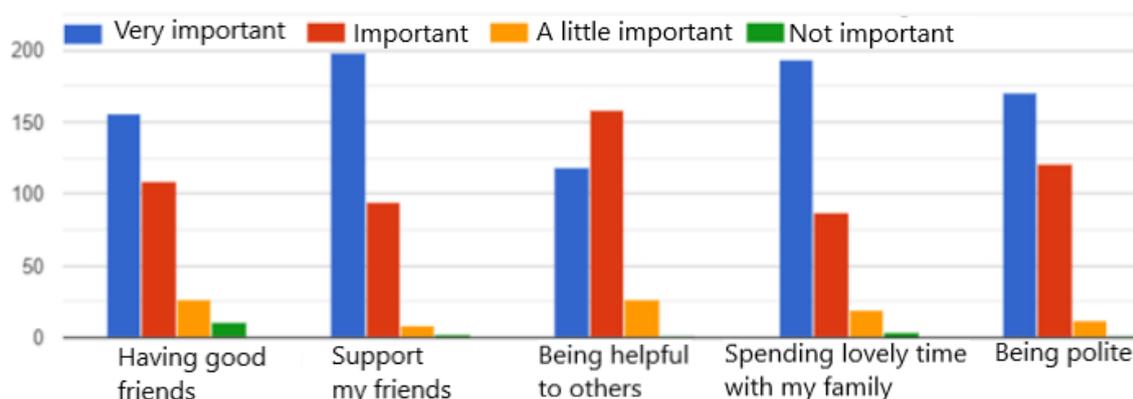
### 5. Value importance

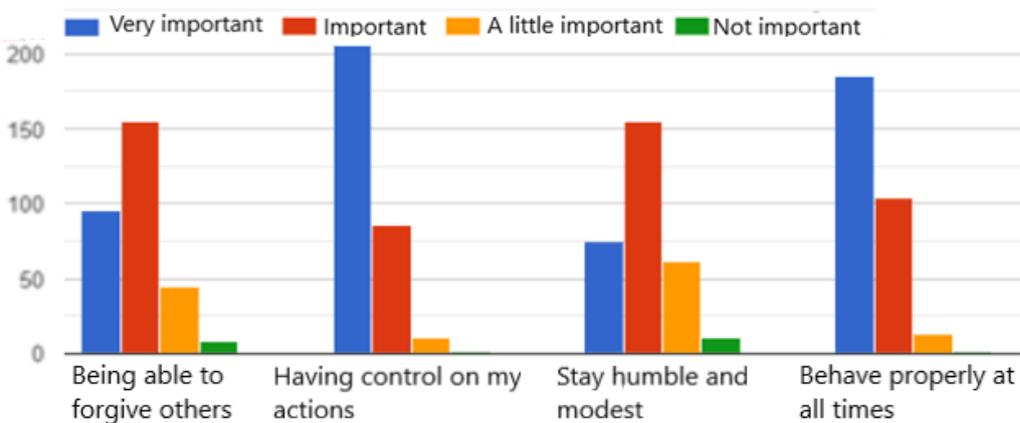
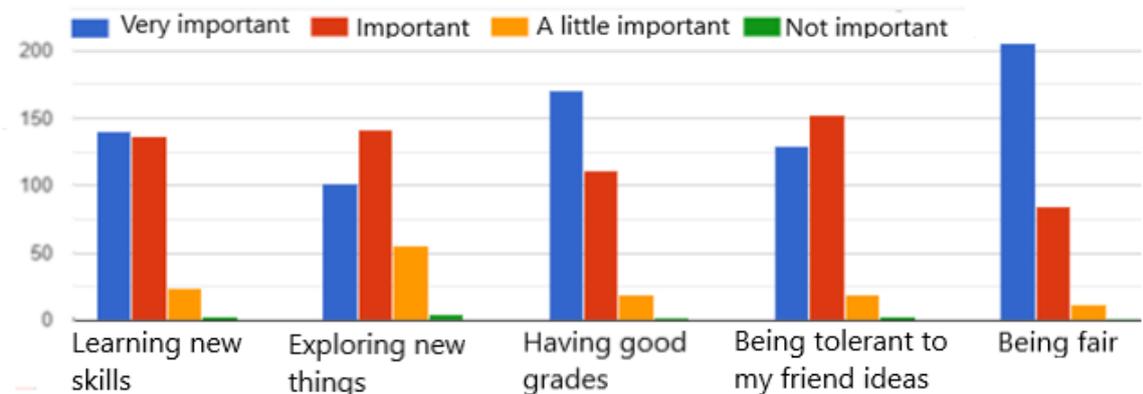
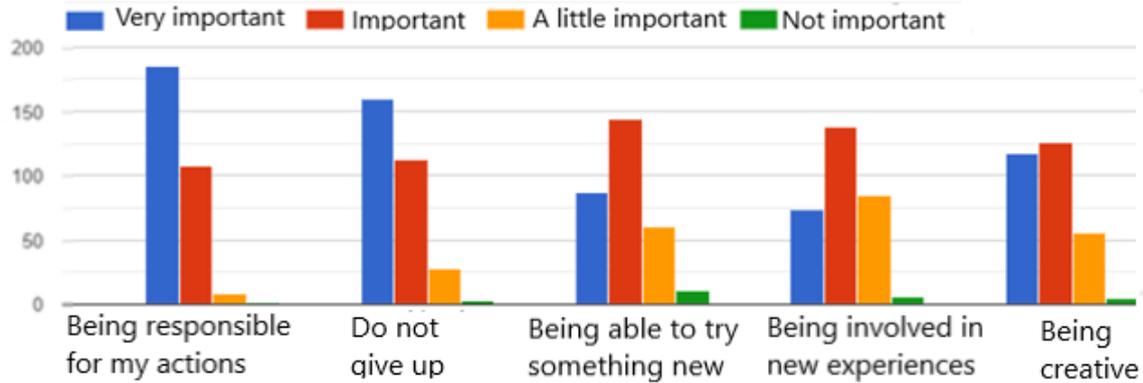
Majority of respondents believe that these fundamental values are very important and important for them.

The most important and the highest rated by the respondents (more than 200 answers) were having control on my actions (205 res.), and being fair (205 res.).

The rest very important values are connected to having good friends (156 res.); support my friends (198 res.); spending lovely time with my family (193 res.); being polite (170 res.); being responsible for my actions (185 res.); do not give up (159 res.); learning new skills (140 res.); Having good grades (171 res.). behave properly at all times (185 res.);

Important value are being helpful to others (158 res.); being creative (126 res.); being involved in new experiences (138 res.); being able to try something new (144 res.); being able to forgive others (155 res.); being tolerant to my friend ideas (152 res.); exploring new things (141res.); stay humble and modest (155 res.)



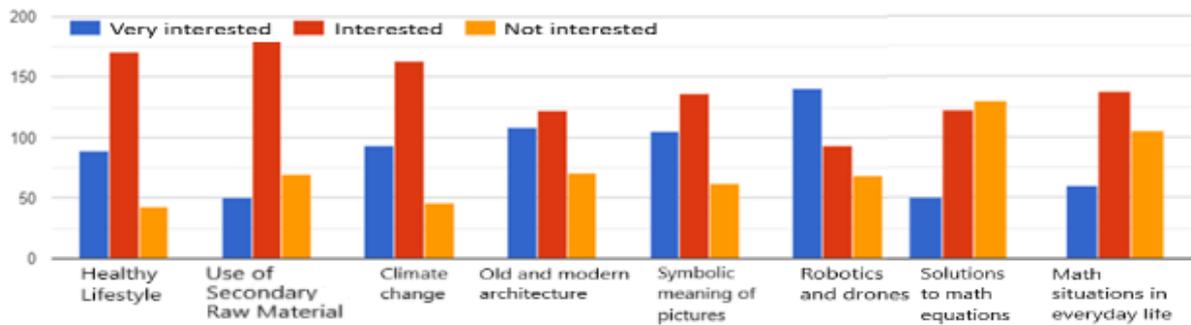


### III. STEAM

#### 6. To which extend do the following topics are interested to you?

According to the respondents the most interesting topics are robotics and drones (very interested - 141; interested -93 res.); use of Secondary Raw Material (very interested - 51; interested - 182 res.); healthy Lifestyle (very interested - 89; interested - 171 res.); climate change (very interested - 94; interested - 163 res.);

Respondents express less interest in old and modern architecture (very interested - 109; interested - 123res.); symbolic meaning of pictures (very interested - 105; interested - 136 res.); math situations in everyday life (very interested - 60; interested - 138 res.); symbolic meaning of pictures (very interested - 105; interested - 136 res.); solutions to math equations (very interested - 50; interested - 123 res.).



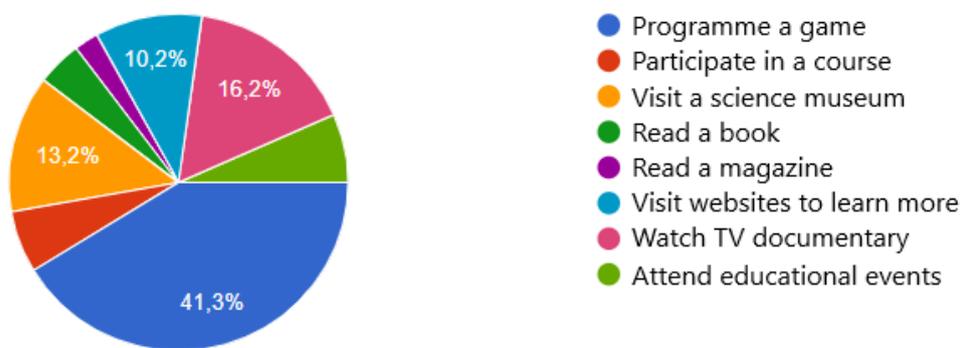
Respondents were then asked to indicate other topics related to Science, Technology, Engineering, Art or Math they are interested in. We found out the following answers:

- Arts (incl. drawing, portraits, works of artists, music, singing, playing, dancing)
- Technologies (incl. computer, school technologies, handicrafts)
- Programming (incl. programming of games)
- Universe, space, stars, planets
- Engineering
- Architecture
- Mathematics (incl. percent, equations, geometrical shapes, multiplication)
- History
- Nature (incl. animals, oceans, plants, how to stop the climat change, ecology)
- Ethics
- Design (incl. graphic design)
- Language (incl. English, Russian, Chinese, native, to learn new language)
- Sports (incl. game, active leisure)
- Emotions
- Robotics and drones
- Explorations in different area (incl.in oceans, nature, space)
- Others (biology, chemistry, physics, geography, mechanics, construction, electronics, modeling, acting in performance, photography, traveling, cooking, NASA, explore countries, repair cars, bones of dinosaurs, documentary, atmosphere, environmental objects, phenomena, artificial intelligence, experiments, have a friend, sugar

counting in products, to study things drowned in the oceans, nuclear powerplant, how to useful use programs like Instagram, YouTube, TikTok, literature, writing, )

7. What would you like to do out of school to increase your knowledge on STEAM?

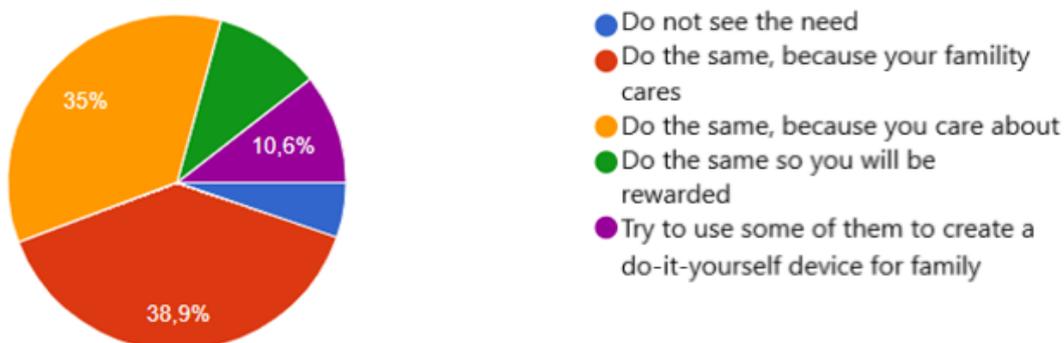
Most of the respondents indicated that they want to program a game (41,3%); watch TV documentary (16,2%); visit a science museum (13,2%); visit websites to learn more (10,2%). Only 6,6% want to attend educational events; participate in a course (5,9%); read a book (4,3%); read a magazine (2,3%).



**SOLVING SITUATION**

8. Your family is collecting bottle caps for the recycling. You...

38,9% of respondents would do the same, because their family cares, 35% would do the same, because they care about, 10,6% try to use some of them to create a do-it-yourself device for family, 10,2% do the same in order to be rewarded, and 5,3% do not see the need.



9. Your parents bring you visit an ancient village famous for its architectural beauty. You...

29,7% of respondents would be happy to go to share an experience with their parents, 23,8% would start making researches about the place and planning the trip, 20,5% would be happy to go so in this way they will have a lot to show and tell to their friends, 13,9% are not interested about it, and 12,2% would want to make sure if everybody is interested or if there are other alternatives.



10. You struggle with math equations homework. You...

Majority of respondents would like to try over and over again because they need to succeed in the exam (40,9%); 24,1% would like to try over and over again because their parents care about their success in school; 16,8% look up for alternative methods of resolution; 14,9% ask for help to their classmates.

Only 5,3% of respondents do not do them.



11. Open question: achieving a goal

In the following question, all the respondents were asked to indicate what goal they want to achieve solving problems of Science, Technology, Engineering, Art or Math, which will help

them and others around them to make the world a better place. They were asked to describe a situation, share an example or note a situation. We found out the following answers:

- Caring for nature, ecology, reducing climate change;
- Create a discovery / invention (incl. create the computer game);
- I want to learn (certain things that will help in the future; my own and other countries' stories; how to behave, live; learn to make money; to be happy);
- To help others;
- Understand cosmos;
- Choose the right / favorite profession;
- Achieve my goal;
- Deepen knowledge of mathematics;
- Create a conscious community;
- To learn and later teach others the ethics needed by those who do not know how to behave and withdraw from life (including kindness, self-confidence, happiness, wisdom);
- Teach others technology because it is important;
- Improving technology to make the world more advanced;
- Explore all corners and oceans of the world to discover new organisms
- Eliminate racism;

## **MAIN CONCLUSIONS**

In general, respondents believe that values, as a central characteristic of human, are very important for them. Majority of respondents indicated proposed fundamental values as very important.

Based on the data collected, interest in STEAM is obvious. In this regard, the most interesting topics are robotics and drones, use of Secondary Raw Material, healthy Lifestyle, and climate change. On the other hand, when it comes to specific topics related to Science, Technology, Engineering, Art or Math they are interested in, the main focus was on arts (incl. drawing, portraits, works of artists, music, singing, playing, dancing). In order to increase their knowledge in STEAM most of the respondents want to program a game.

The research also shows that there is a positive attitude in solving the situations in the most appropriate way: respondents are care about the recycling, because their family cares; want

to share their time with their parents, and are ready to try over and over again, because they need to succeed in the exam.

The most frequently reported goals that young people want to achieve solving problems of STEAM are connected to caring for nature (ecology, reducing climate change), to create a discovery / invention (incl. create the computer game), and to wish to learn.

## SECOND REPORT OF THE RESEARCH IN LITHUANIA

### INTRODUCTION

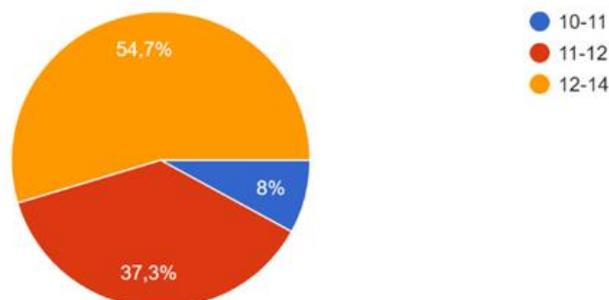
The research was carried out using a survey posted on the Internet. The target group were children 10-14 years old. The purpose of the study was to investigate the change in the growth of students' general competencies after using the MORALSTEAM game. 225 students participated in the study. The survey was developed in an electronic version and was sent to three schools by sending a link to the survey. The results of the obtained data are as follows.

#### I. SOCIO-DEMOGRAPHIC DATA

##### 1. Age:

The most numerous groups were those aged 12-14 (54,7%), the second main group of respondents were on age 11-12 (37,3%) and 10-11 years (8%).

Amžius  
225 atsakymai

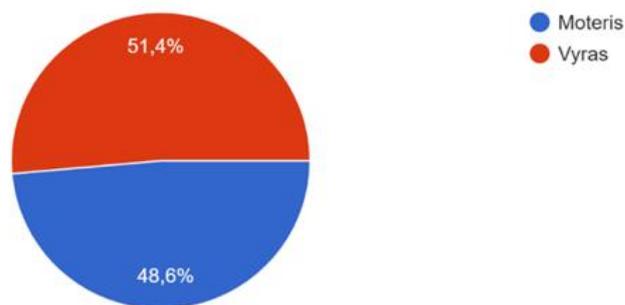


## 2. Sex

Among the 225 respondents, there are more women 51,4 % than men 48,6%.

### Lytis

216 atsakymų

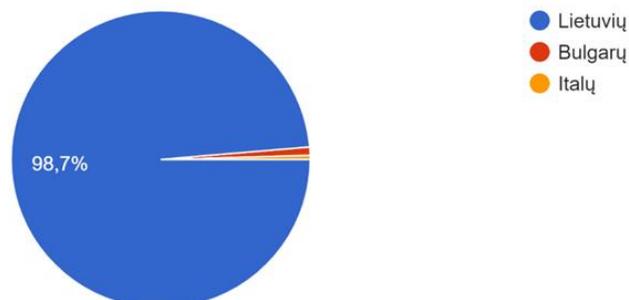


## 3. Nationality

Almost all respondents are Lithuanian citizens.

### Tautybė

223 atsakymai

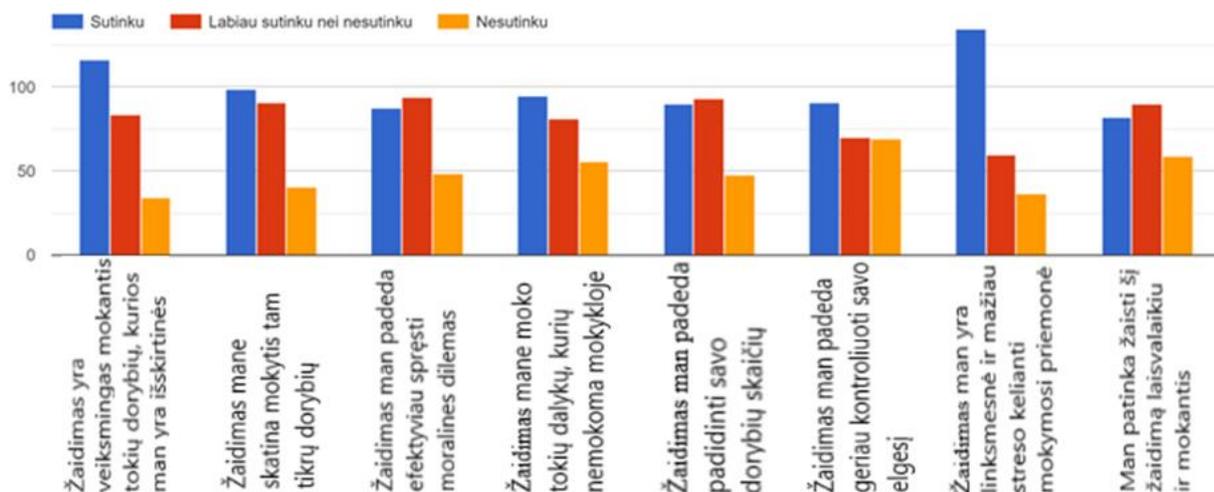


## II. POTENTIAL EFFECTIVENESS

The majority of respondents indicate that using the game is more fun and less stressful for me (135 + 84 rec.) In addition, the most important and highly rated by the respondents are: Is the game effective in learning the set of values that are unique to me (116 + 60 rec.); The game teaches me things I wouldn't learn in school (95 +81 resp.);

Respondents show less interest but positively or more positively evaluates: The game motivates me to learn the set of values (99 + 91 resp.); The game helps me increase my value set (90 + 93 resp.); The game gives me the opportunity to have more control over my behavior and the learning process (91 + 70 resp.); The game allows them to solve moral dilemmas more effectively (88 + 94 resp.); I like to play the game for fun and learning (82 + 90 resp.)

Galimas efektyvumas



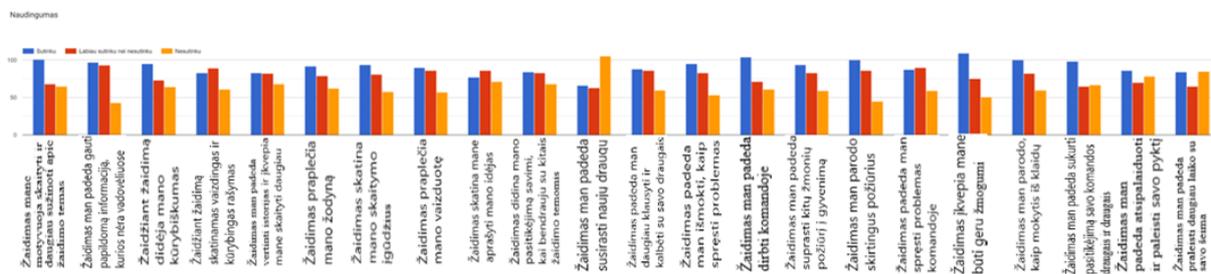
### III. UTILITY

According to the respondents, the greatest benefit of the game is related to the formation of a positive personality, improvement of reading skills, motivation and interest in STEAM topics - the game inspires me to be a good person (109 + 75 resp.); The game shows me how to learn from mistakes (100 + 75 resp.); The game helps me appreciate stories and inspires me to read more (101 + 68 resp.); The game helps me access additional information outside of my textbooks (97 + 93 resp.); The game increases my creativity (95 + 93 resp.); The game helps me appreciate stories and inspires me to read more (94 + 81 resp.); Through the game, I improve my vocabulary (92 + 79 resp.); The game expands my imagination (90 + 86 resp.).

Building and improving social connections with family and friends is similarly valued - Playing the game helps me to work as a team (104 + 71 resp.); My game shows different points of view (100 + 86 resp.); The game helps me build trust in my teammates and friends (98 + 65 resp.); Playing helps me learn how to solve problems (95 + 83 resp.); The game helps me to

understand other people's view of life (94 + 83 resp.); The game helps me listen more to my friends and talk to them (88 + 86 resp.); Playing the game helps me solve problems as a team (87 + 90 resp.); The game helps me spend more time with my family (84 + 65 resp.).

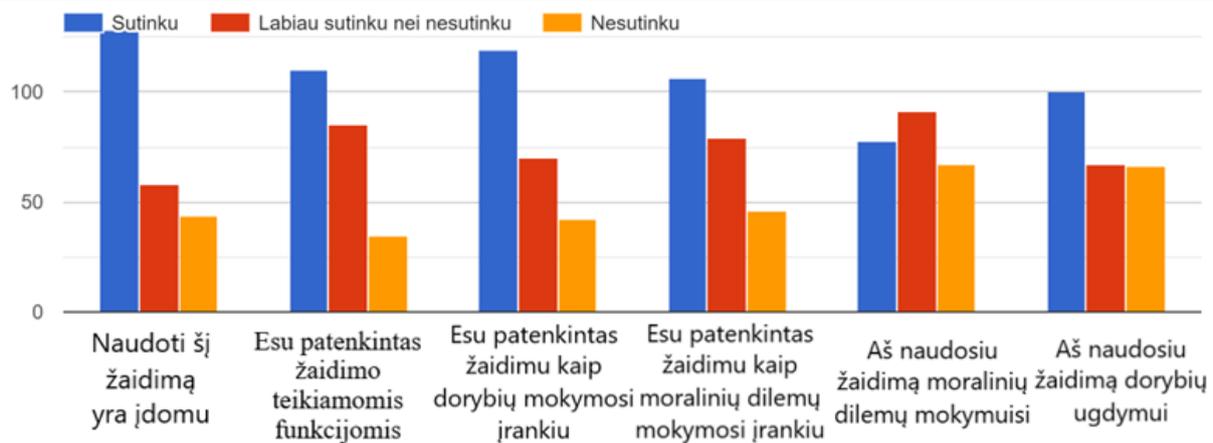
The graph shows that some of the respondents While playing, the game motivates me to read to learn more about the topics (84 + 83 resp.); Playing the game helps me appreciate stories and inspires me to read more (83 + 82 resp.); Playing the game supports imaginative and creative writing (83 + 89 resp.); Playing the game helps me write about my ideas (77 + 86 resp.); Playing the game helps me to find new friends (66 + 63 resp.); Playing helps me relax and release my anger (86 +70 resp.).



#### IV SATISFACTION

The graph shows that respondents are interested in using this game (128 + 58 resp.); are satisfied with the game as a set of values learning tool (119 + 70 resp.); are satisfied with the functions offered by the game (110 + 85 resp.); are satisfied with the game as a moral dilemmas learning tool (106 + 79 resp.); willing to keep using the game for set of values acquisition(100 + 67 resp).

In addition, a significant number of respondents indicated that they would use the game to learn about moral dilemmas (78 + 91 resp.).



## MAIN CONCLUSIONS

The MORALSTEAM game is potentially effective in solving moral dilemmas and teaching set of values.

The MORALSTEAM game is useful for students. In this regard, it is most useful for forming a positive personality, improving social relations both in the family and among friends, and improving reading skills (including vocabulary accumulation and increase, motivation for reading).

There is a positive attitude towards further use of the game in order to acquire a set of values and solve moral dilemmas, as the respondents feel satisfaction in using the game.

## REPORT OF THE EDUCATORS RESEARCH IN LITHUANIA

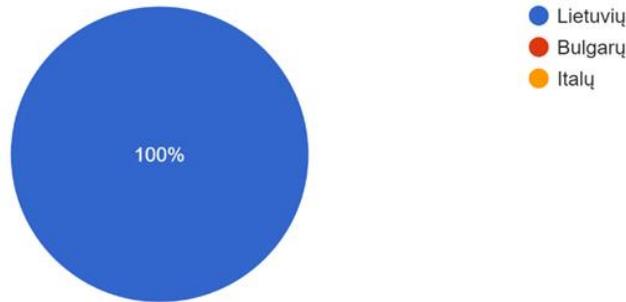
### INTRODUCTION

The research was carried out using a survey posted on the Internet. The target group were educators from schools. The aim of the study was to explore change in the growth of general competences of pupils after game playing. 15 educators took part in the study.

#### I. DEMOGRAPHIC CHARACTERISTICS OF THE SAMPLE

All respondents were Lithuanian nationals.

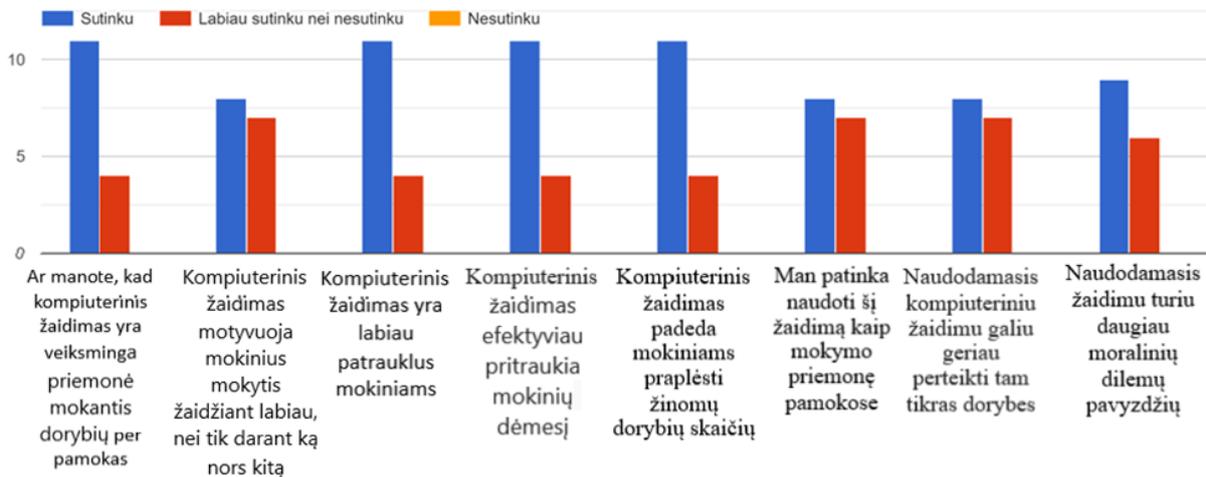
Tautybė  
15 atsakymų



## II. POTENTIAL EFFECTIVENESS

All respondents believe that the computer game is an effective tool for teaching virtues during lessons (11 + 4 resp.); The game is more challenging for students (11 + 4 resp.); The game holds students' attention more effectively (11 + 4 resp.); teacher have a wider range of moral dilemmas activities using the game (9 + 6 resp.); Using the game teacher is able to present the set of values better (8 + 7 resp.); teachers enjoy using the game for teaching in the classroom (8 + 7 resp.); The game motivates students to learn more by playing the game, rather than something we are just doing (8 + 7 resp.).

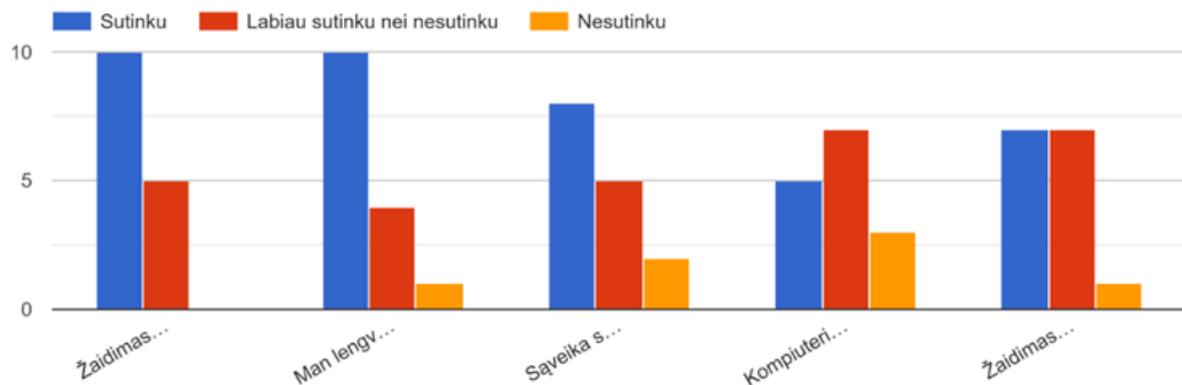
Galimas efektyvumas



## III. USABILITY

All respondents rated the game as suitable in terms of general use (10 + 6 resp.). For the vast majority it was easy to learn to control the game for teaching certain values (10 + 4 resp.); evaluates the interaction with the computer game as not requiring a lot of student effort (8 + 5 resp.), evaluates the game as a help to organize the learning process more effectively (7 + 5 resp.) and as a useful tool that enables more control over the learning process (5 + 7 resp.).

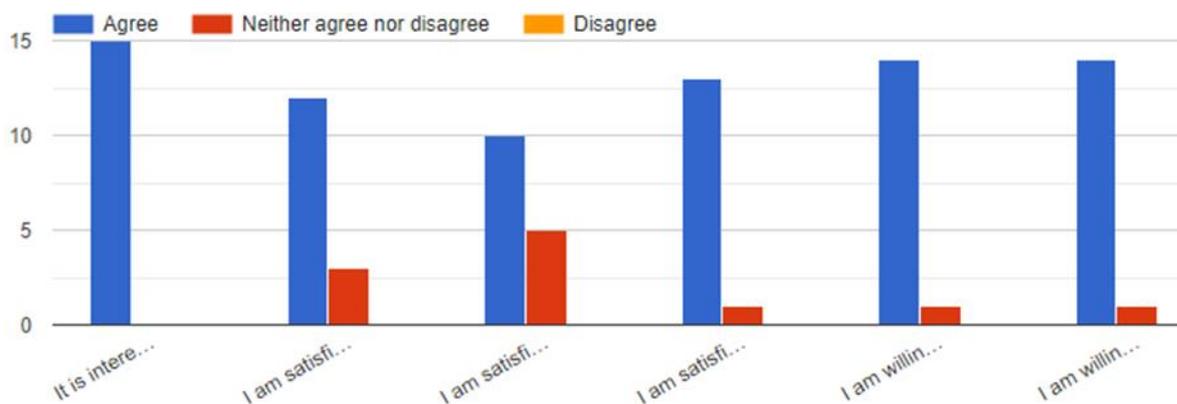
### Naudojimo tinkamumas



### IV. SATISFACTION

The graph shows that all respondents find it interesting to use this game (11 + 4 resp.), will use the game for the development of virtues (10 + 5 resp.), will use the game for teaching moral dilemmas in lessons (9 + 6 resp.), are satisfied with the game as a tool for learning values (9 + 6 resp.), with the game as a tool for learning moral dilemmas (8 + 7 resp.) and with the functions provided by the game (9 + 6 resp.).

### Satisfaction



### MAIN CONCLUSIONS

The survey shows that educators believe that using games in the classroom is very effective and useful.

The game has the potential to be used as part of the educational process in the future.

## FIRST REPORT OF THE RESEARCH IN BULGARIA

### INTRODUCTION

The research was carried out using a survey posted on the Internet. The target group were children 10-14 years old. The aim of the study was to find out the opinions of the respondents in terms of developing a video game and improvement offer for children in the moral education and STEAM development. The aim was also to learn about a set of values that form the foundation of children's character in order to understand how they guide their decisions and how they act in moral dilemmas. 225 students took part in the study. The survey was developed in an electronic version and sent to three schools by sending a link to the survey. The results of the obtained data are as follows.

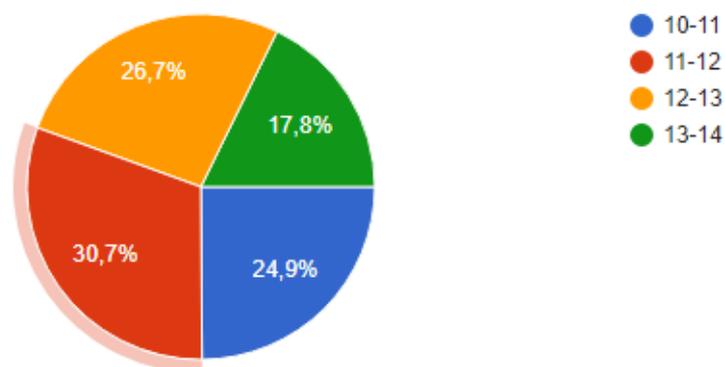
### I. SOCIAL AND DEMOGRAPHIC CHARACTERISTICS OF THE SAMPLE

#### 1. Age

The most numerous groups were those aged 11-12 (30,7%), the second main group of respondents were on age 12-13 (26,7%) and 10-11 (24,9%).

#### Възраст

225 отговора

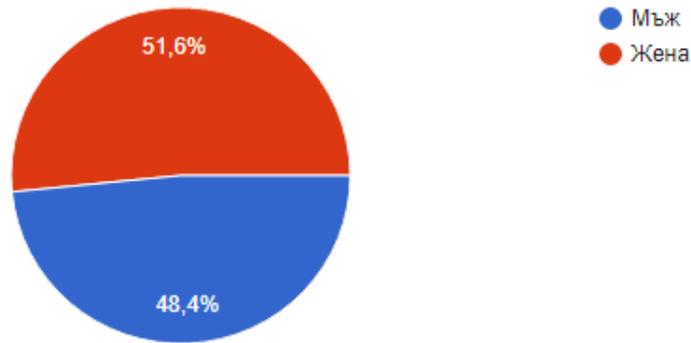


#### 2. Gender

Among the 225 respondents, there were more women 51,6% than men 48,4%.

## Пол

225 отговора

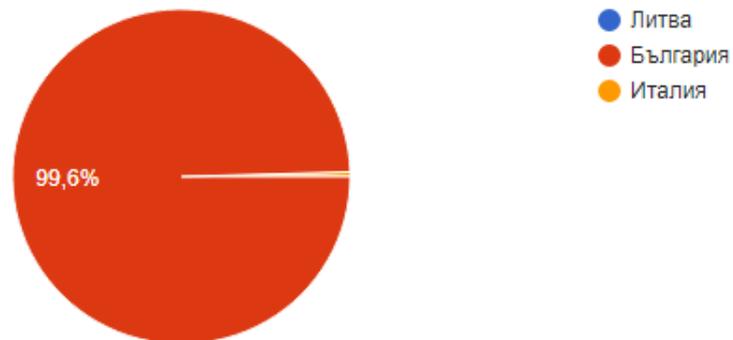


## 3. Nationality

All respondents were Bulgarian nationals.

## Националност

225 отговора



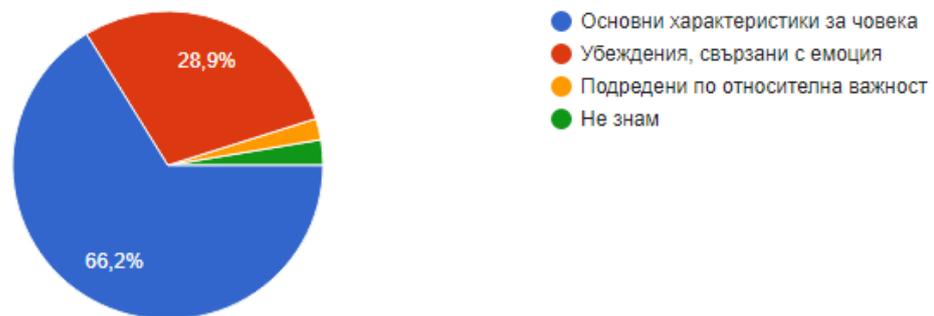
## II. VALUES

### 4. Value for you is

Most of the respondents indicated that value for them is central characteristic of human (66,2%), and beliefs link to emotion (28,9%). Less than 5% answered that value for them is ordered by relative importance (2,2%) and do not know (2,7%).

"Ценности" за вас са..

225 отговора



##### 5. Value importance

It is not surprising that majority of respondents believe that these fundamental values are very important for them.

The most important and the highest rated by the respondents (more than 210 answers) were having good friends (222 res.); support my friends (220 res.); being helpful to others (215 res.); being creative (215 res.); do not give up (214 res.); learning new skills (214 res.); being involved in new experiences (213 res.); being able to try something new (210 res.); Having good grades (210 res.).

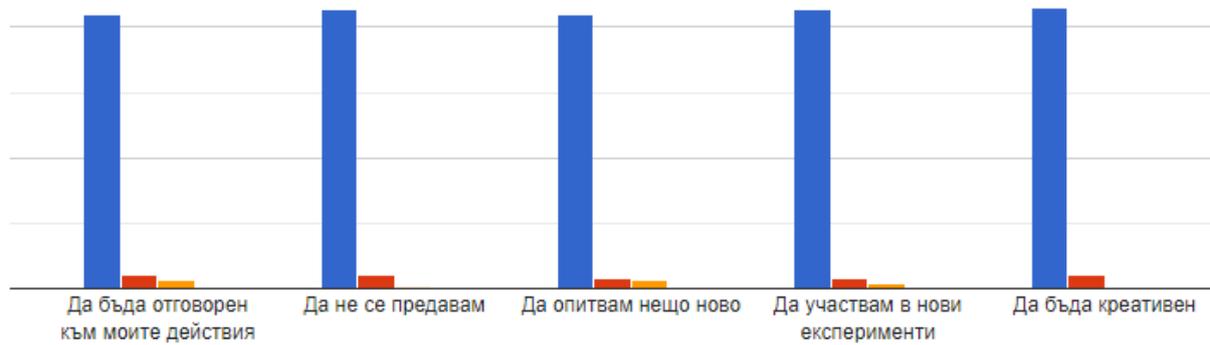
The rest important values are connected to being responsible for my actions (209 res.); being fair (209 res.); spending lovely time with my family (208 res.); stay humble and modest (207 res.); being able to forgive others (207 res.); having control on my actions (206 res.); being tolerant to my friend ideas (206 res.); exploring new things (205 res.); behave properly at all times (204 res.); being polite (199 res.).



За всяка ценност, моля, отбележете колко важна е тя в живота ви:

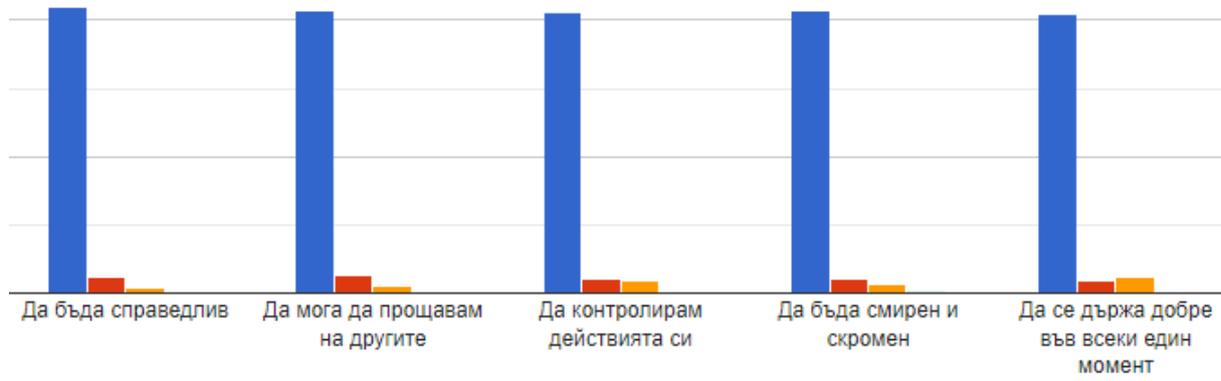


За всяка ценност, моля, отбележете колко важна е тя в живота ви:



За всяка ценност, моля, отбележете колко важна е тя в живота ви:





### III. INTEREST IN STEAM

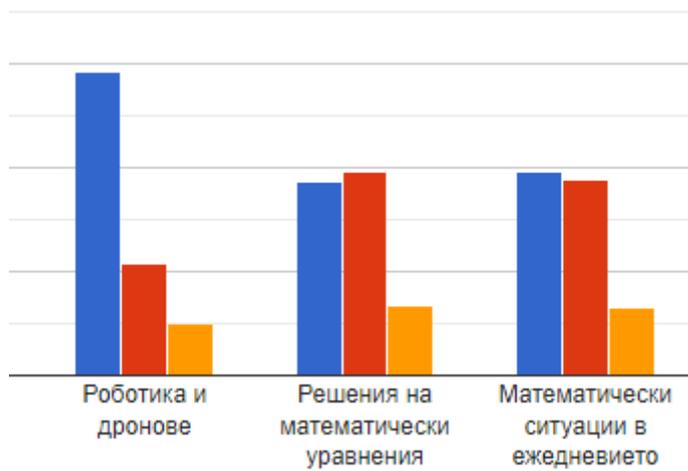
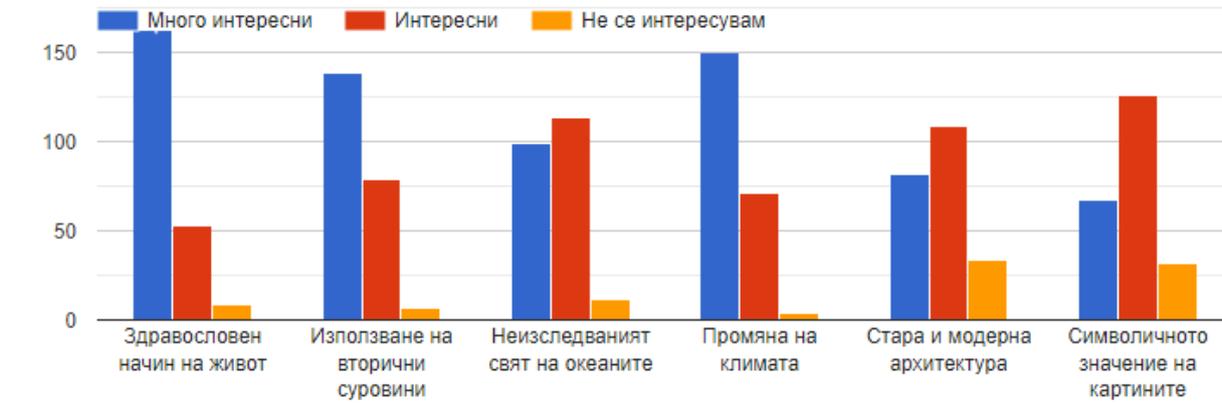
#### 6. To which extent do the following topics are interested to you?

According to the respondents the most interesting topics are healthy Lifestyle (163 res.); robotics and drones (146 res.); climate change (150 res.) and use of Secondary Raw Material (139 res.).

In addition, respondents express less interest in the unexplored world of the ocean (99 res.); old and modern architecture (82res.) and symbolic meaning of pictures (67 res.).

There is some fluctuation between another possible answers as follow: 93 respondents out of 225 indicated solutions to math equations as very interesting and 98 respondents out of 225 as interesting. The same is the situation in math situations in everyday life - 98 respondents out of 225 found the topic as very interesting and 94 respondents out of 225 as interesting.

До каква степен следните теми са интересни за вас?



Respondents were then asked to indicate other topics related to Science, Technology, Engineering, Art or Math they are interested in. We found out the following answers:

- Mathematics in medicine
- Robotics in libraries
- Robotics in medicine
- Nature protection
- Drones to help the police
- Learning symbols
- Robotics and drones in everyday life

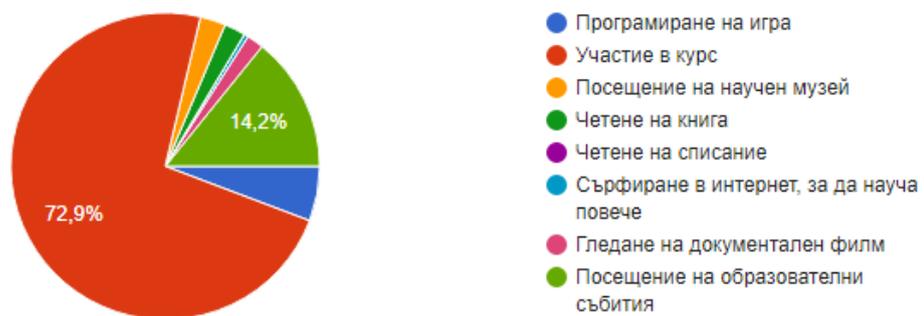
7. What would you like to do out of school to increase your knowledge on STEAM?

Most of the respondents indicated that they want to participate in a course (72,9%) and 14,2% want to attend educational events. Only 5,8% want to program a game; visit a science museum (2,7%); read a book (2,2%); watch TV documentary (1,8%) and visit websites to learn more (0,4%).

Read a magazine was not recognized by respondents as possible answers.

Какво бихте искали да правите извън училище, за да увеличите знанията си в STEAM?

225 отговора



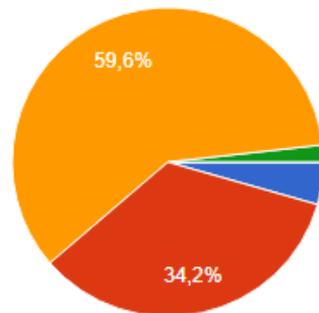
## SOLVING SITUATIONS

8. Your family is collecting bottle caps for the recycling. You...

The chart shows that 59,6% of respondents would do the same, because they care about, 34,2 would do the same, because their family cares, 4,4% do not see the need and 1,8% do the same in order to be rewarded. The last possible answer, try to use some of them to create a do-it-yourself device for family were not recognized by respondents.

Семейството ви събира капачки от бутилки за рециклиране. Вие...

225 отговора



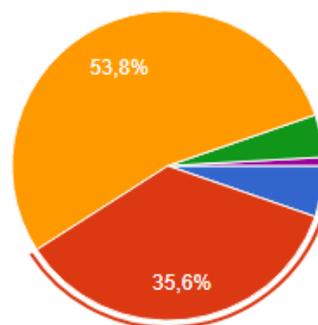
- Не виждате необходимост
- Правите същото, защото вашето семейство го е грижа
- Правите същото, защото вас ви е грижа
- Правите същото, за да бъдете възнаградени
- Опитвате се да използвате някои от тях, за да създадете самостоятелно устройство за семейството

9. Your parents bring you visit an ancient village famous for its architectural beauty. You...

The chart show that 53,8% of respondents would be happy to go so in this way they will have a lot to show and tell to their friends, 35,6% would be happy to go to share an experience with their parents, 5,3% are not interested about it, 4,4% would start making researches about the place and planning the trip and 0,9% would want to make sure if everybody is interested or if there are other alternatives.

Родителите ви ви карат да посетите древно село, известно с архитектурната си красота. Вие...

225 отговора



- Не се интересувате от това
- Радвате се да отидете и споделите опит с родителите си
- С удоволствие ще отида, за да има какво да покажа и разкажа на приятелите си
- Започвате да правите проучвания за мястото и да планирате пътуването
- Искате да се уверите дали всички се интересуват или има други алтерна...

## 10. You struggle with math equations homework. You...

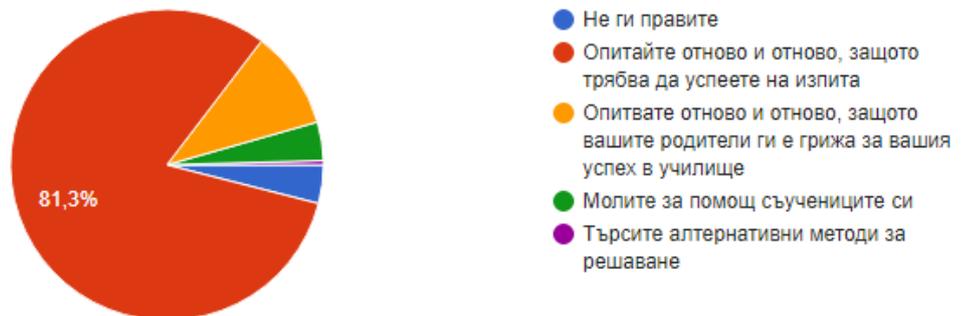
The chart shows that majority of respondents would like to try over and over again because they need to succeed in the exam (81,3%); 10,2% would like to try over and over again because their parents care about their success in school.

There is a parity between two possible answers as follow: ask for help to your classmates (4%) and do not do them (4%).

Only 0,4% of respondents indicated look up for alternative methods of resolution.

Полагате усилия с домашната си работа от математически уравнения. Вие...

225 отговора



## 11. Open question: achieving a goal

In the following question, all the respondents were asked to indicate what goal they want to achieve solving problems of Science, Technology, Engineering, Art or Math, which will help them and others around them to make the world a better place. They were asked to describe a situation, share an example or note a situation. We found out the following answers:

- Assisting the police in detecting crimes
- Development of medicine
- Dealing with incurable diseases
- A better way of life
- Combating climate change
- Protecting the planet
- Facilitated way of life

- Fighting the pandemic
- Facilitating people's daily lives
- High level medicine
- Creating new technologies to facilitate people with health problems
- Drones to rescue distressed people in the mountains
- Robotics in everyday life
- Importance of volunteers for changing the environment in which we live

## **MAIN CONCLUSIONS**

In general, respondents believe that values, as a central characteristic of human, are very important for them. Majority of respondents indicated proposed fundamental values as very important.

Based on the data collected, interest in STEAM is obvious. In this regard, the most interesting topics are healthy Lifestyle; robotics and drones; climate change and use of Secondary Raw Material. On the other hand, when it comes to specific topics related to Science, Technology, Engineering, Art or Math they are interested in, the main focus was on robotics and drones in help of medicine and police. In order to increase their knowledge in STEAM most of the respondents want to participate in a course.

The research also shows that there is a positive attitude in solving the situations in the most appropriate way: respondents are care about the recycling; want to share their time with their parents and do not give up into difficulties, ready to try over and over again, because they need to succeed in the exam.

The most frequently reported goals that young people want to achieve solving problems of STEAM are connected to medicine, planet protection and facilitating daily life.

## SECOND REPORT OF THE RESEARCH IN BULGARIA

### INTRODUCTION

The research was conducted using a survey published on the Internet. The target group was children aged 10-14 years. The purpose of the study was to investigate the change in the growth of students' general competencies after using the MORALSTEAM game. 225 students participated in the study. The survey was developed in an electronic version and was sent to three schools by sending a link to the survey. The results of the obtained data are as follows.

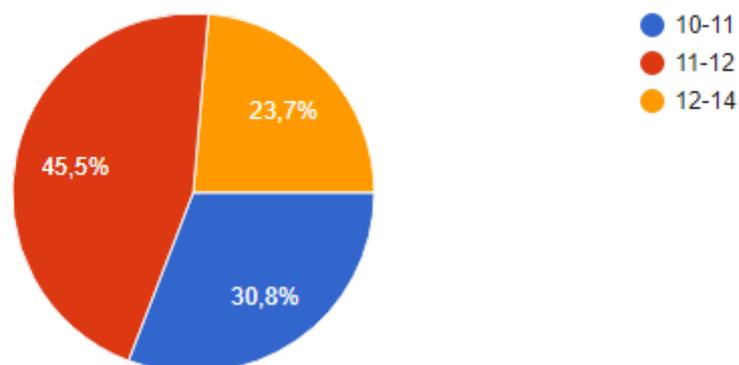
#### I. SOCIAL AND DEMOGRAPHIC CHARACTERISTICS OF THE SAMPLE

##### 1. Age

The most numerous groups are those aged 11-12 years (45.5%), the second main group of respondents are aged 10-11 years (30.8%) and 12-14 years (23.7%).

#### Възраст

224 отговора

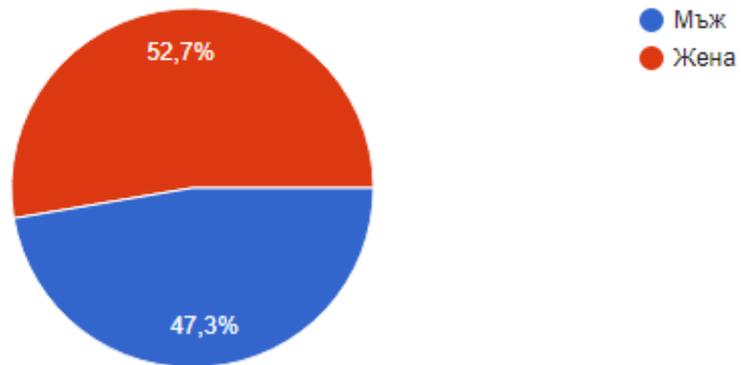


##### 2. Sex

Among the 225 respondents, there are more women 52.7% than men 47.3%.

## Пол

222 отговора

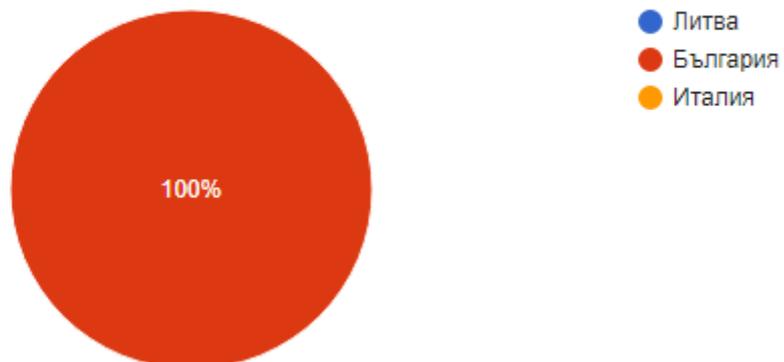


## 3. Nationality

All respondents are Bulgarian citizens.

## Националност

225 отговора

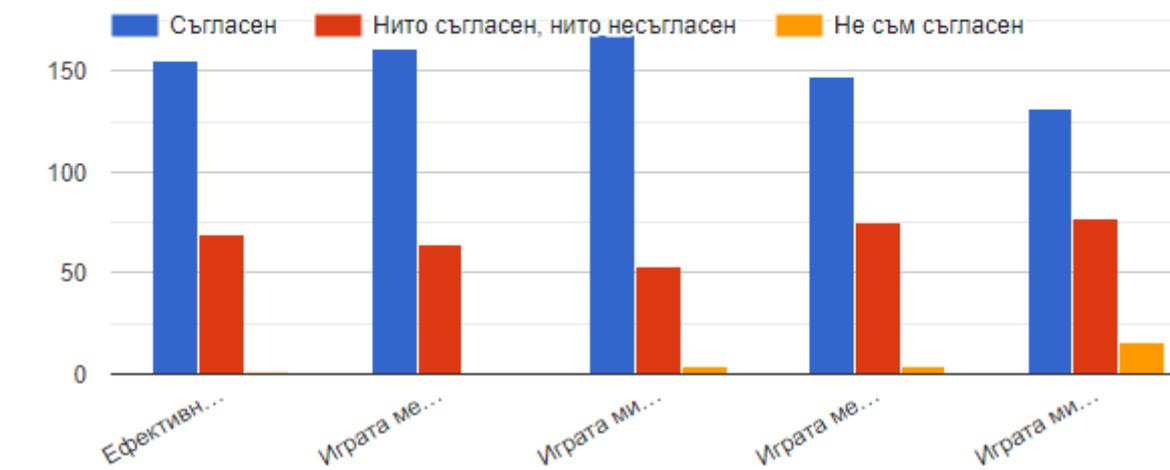


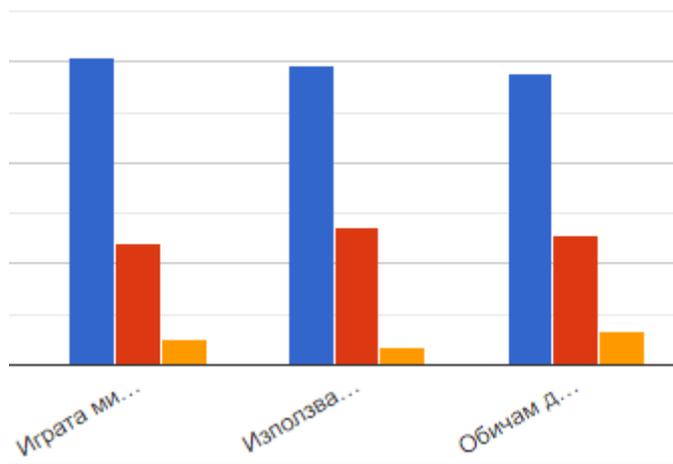
## II. POTENTIAL EFFECTIVENESS

The majority of respondents indicate that the game allows them to solve moral dilemmas more effectively (168 res.). In addition, the most important and highly rated by the respondents are: The game motivates me to learn the set of values (161 rec.); Is the game effective in learning the set of values that are unique to me? (155 rec.); The game gives me the opportunity to have more control over my behavior and the learning process (152 rec.).

Respondents show less interest in Using the game is more fun and less stressful for me (148 rec.); The game teaches me things I wouldn't learn in school (147 rec.); I like to play the game for fun and learning (144 rec.); The game helps me increase my value set (132rec.).

### Потенциална ефективност





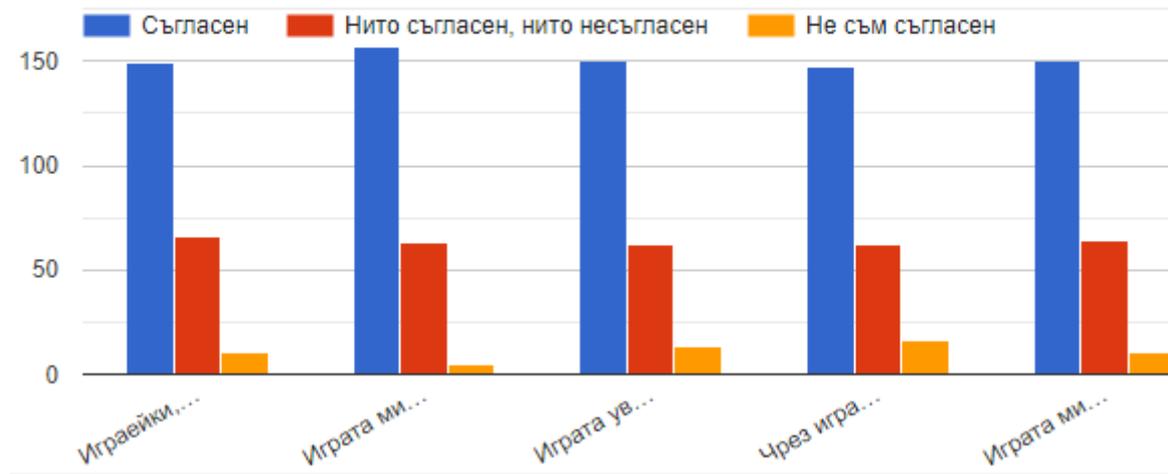
### III. UTILITY

According to the respondents, the greatest benefit of the game is related to improving the vocabulary and building and improving social ties with family and friends - Through the game, I improve my vocabulary (162 rec.); The game helps me build trust in my teammates and friends (161 rec.); The game helps me listen more to my friends and talk to them (158 rec.); The game helps me spend more time with my family (159 rec.); The game helps me to understand other people's view of life (157 rec.) ; The game helps me access additional information outside of my textbooks (157 rec.).

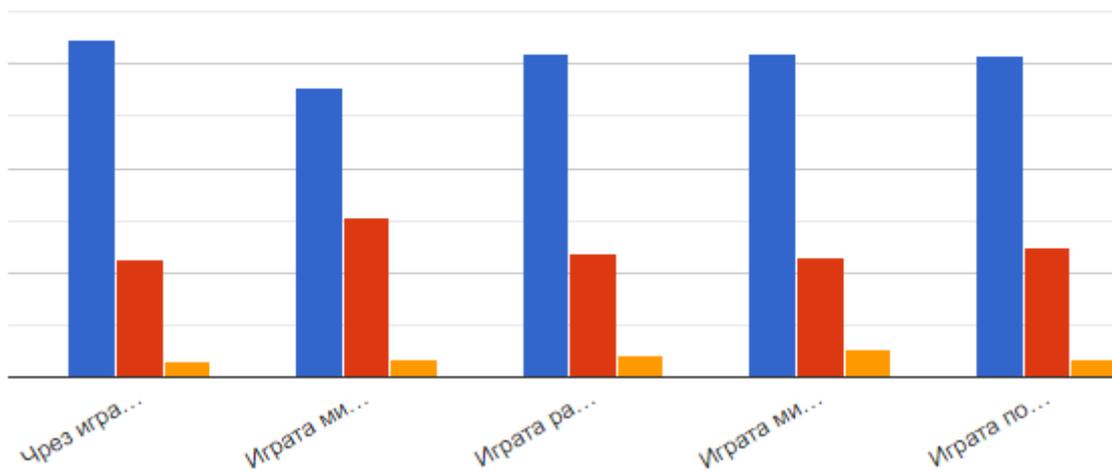
In addition, there is parity among respondents regarding motivation for scientists and creativity - My game shows different points of view (156 rec.); The game shows me how to learn from mistakes (156 rec.); The game expands my imagination (155 rec.); The game helps me get ideas and write related stuff (155 rec.); The game increases my creativity (150 rec.); The game helps me appreciate stories and inspires me to read more (150 rec.); While playing, the game motivates me to read to learn more about the topics (149 rec.); Playing helps me learn how to solve problems 149; Playing helps me relax and release my anger (149 rec.); Through play I support imagination and creative writing (147 rec.); The game inspires me to be a good person (147 rec.).

The graph shows that for part of the respondents the Game increases my self-confidence when communicating with others on the topics (154 rec.); The game helps me work in a team (153 rec.); The game helps me make new friends (146 rec.); The game helps me solve problems in a team (144 rec.); The game helps me be a better reader (139 rec.).

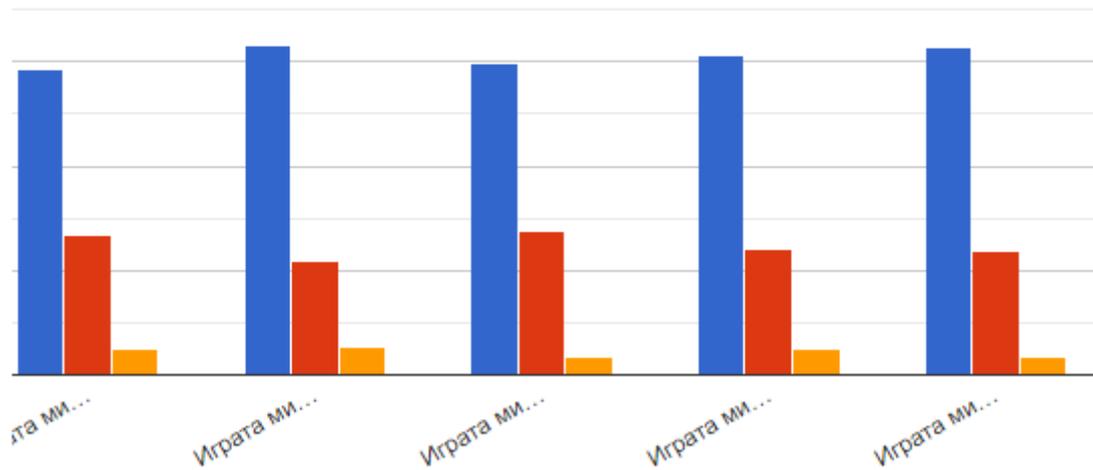
### Полезност



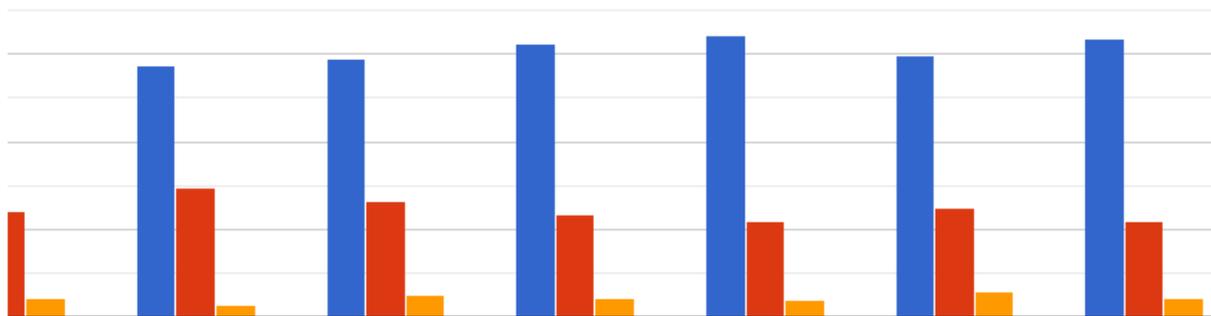
### Полезност



## Полезност



## Полезност



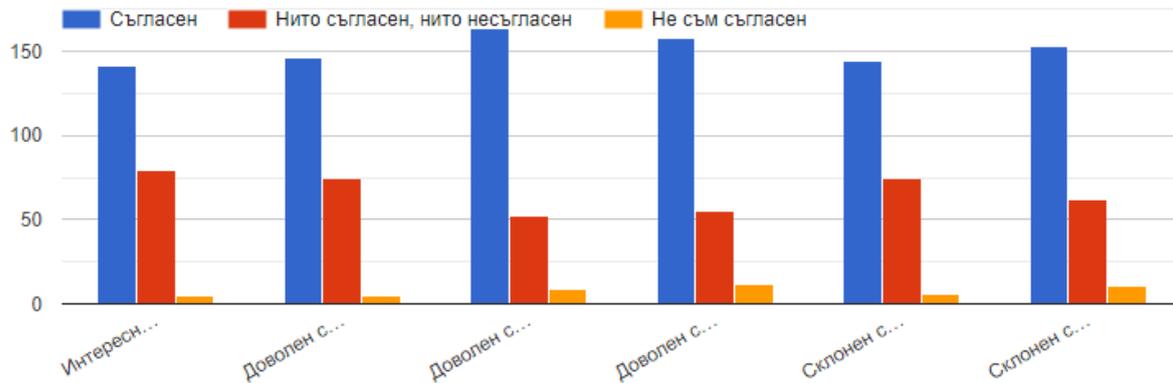
### IV. SATISFACTION

It can be seen from the graph that the respondents feel satisfaction of the game as a tool for learning the set of values (164 rec.) and for learning moral dilemmas (158rec.) and tend to continue to use the game for acquiring the set of values (153 rec.) and for learning moral dilemmas (144 rec.).

In addition, a large number of respondents indicated that they were satisfied with the features offered by the game (146 rec.) and that they were interested in using it (141 rec.).



## Удовлетворение



## MAIN CONCLUSIONS

Overall, respondents felt that the MORALSTEAM game was potentially effective for solving moral dilemmas and learning about the set of values.

Based on the data collected, the usefulness of the MORALSTEAM game is obvious. In this regard, the most useful are building and increasing the vocabulary and improving social relations both in the family and among friends.

The research also shows that there is a positive attitude towards the continued use of the game to acquire the set of values and solve moral dilemmas, as the respondents feel satisfaction with the use and.

## REPORT OF THE EDUCATORS RESEARCH IN BULGARIA

### INTRODUCTION

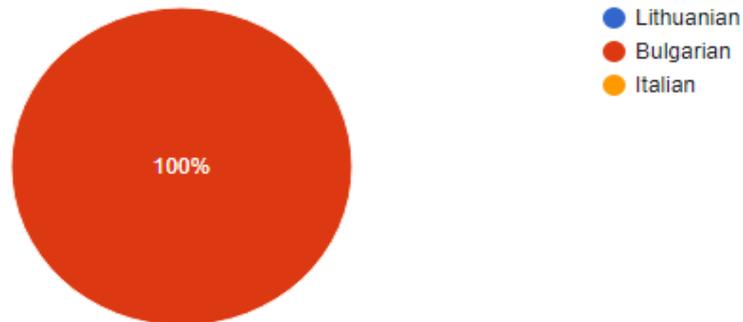
The research was carried out using a survey posted on the Internet. The target group were educators from schools. The aim of the study was to explore change in the growth of general competences of pupils after game playing. 15 educators took part in the study. The survey shows in the following diagramme that educators find using the game very effective and useful in class and they see potential for future usage as a part of educational process.

## I. DEMOGRAPHIC CHARACTERISTICS OF THE SAMPLE

All respondents were Bulgarian nationals.

### Nationality

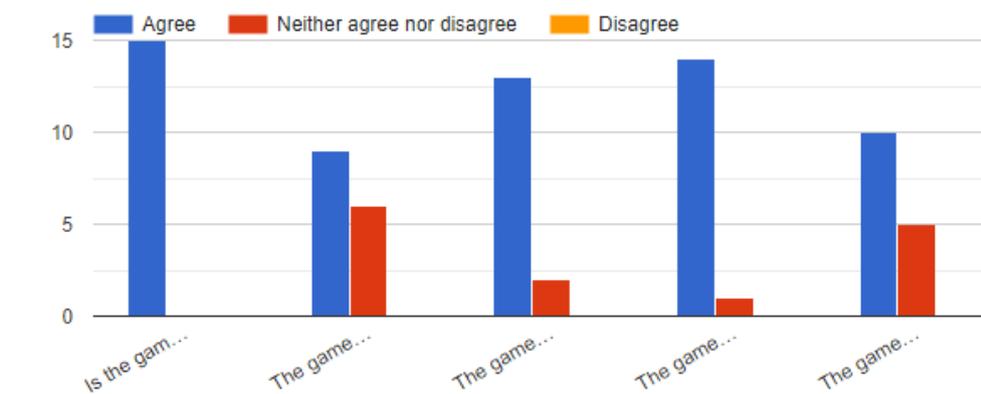
15 отговора

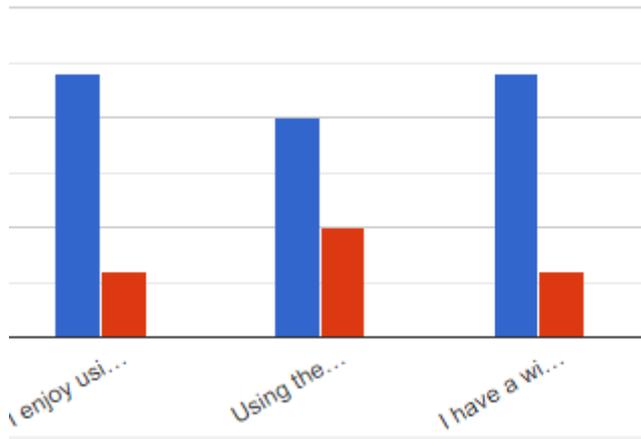


## II. POTENTIAL EFFECTIVENESS

All respondents believe that the created game is potentially effective for learning in schools. All respondents identified the game as effective for learning the set of values; 9 out of 15 respondents believe that through play students can learn more; and that the game is a big challenge for them 12 out of 15 resp. and keeps their attention in the classroom- 14 of 15 res. According to the trainers, the game helps increase the set of values 10 out of 15, respectively; good classroom teaching tool 12 of 15 resp. and an opportunity to better represent the set of values-10 of 15 res. , using a wide range of moral dilemmas – 10 of 15 res.

### Potential effectiveness

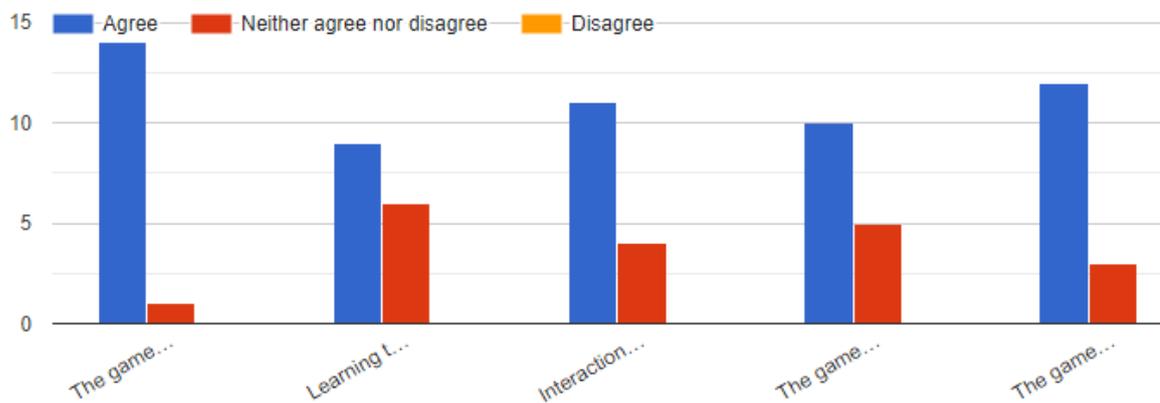




### III. USABILITY

All educators agree that the game is suitable for use in the classroom. According to them, managing the value set learning game is easy- 9 of 15 res.; and requires little effort for learners – 11 out of 15 res. The game gives more control over the learning process - 10 out of 15 res. And it helps to achieve greater efficiency - 12 out of 15res.

#### Usability

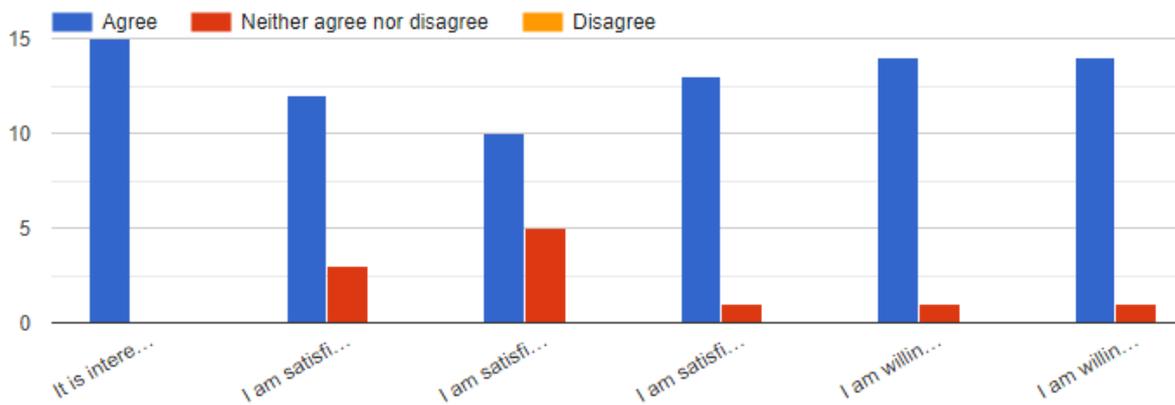


### IV. SATISFACTION

All trainers show interest while using the game and show interest in continuing to use it to study moral dilemmas – 14 out of 15 resp. and acquisition of a set of values - 14 of 15 res. Most educators are satisfied with the game as a tool for learning about moral dilemmas in

the classroom 13 of 15 refs.; learning the set of values - 10 of 15 res. and the features the game offers – 12 out of 15 res.

## Satisfaction



## MAIN CONCLUSION

The research shows that educators believe that using games in the classroom is very effective and useful.

The game has the potential to be used as part of the learning process in the future.

## FIRST REPORT OF THE RESEARCH IN ITALY

### INTRODUCTION

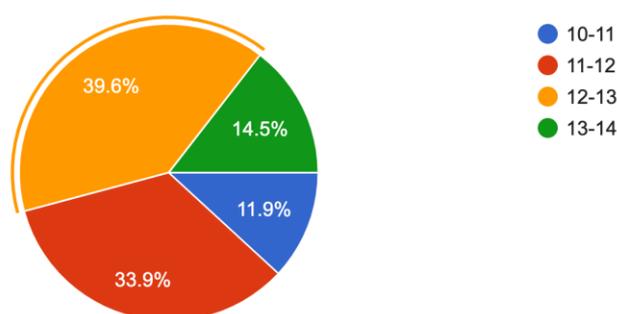
The research was carried out using a survey posted on the Internet. The target group were children 10-14 years old. The aim of the study was to find out the opinions of the respondents in terms of developing a video game and improvement offer for children in the moral education and STEAM development. The aim was also to learn about a set of values that form the foundation of children's character in order to understand how they guide their decisions and how they act in moral dilemmas. 227 students took part in the study. The survey was developed in an electronic version and sent to three schools by sending a link to the survey. The results of the obtained data are as follows.

#### I. SOCIAL AND DEMOGRAPHIC CHARACTERISTICS OF THE SAMPLE

##### 1. Age

The most numerous groups were those aged 12-13 (39,6%), the second main group of respondents were on age 11-12 (33,9%). The minority of students who took part in the study where those on age 13-14 (14,5%) and 10-11 (11,9%).

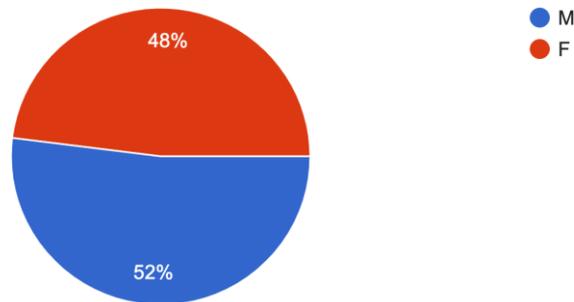
Età  
227 responses



##### 2. Gender

The number of women and men was quite balanced among the respondents but to be precise there were more men 52% than women 48%.

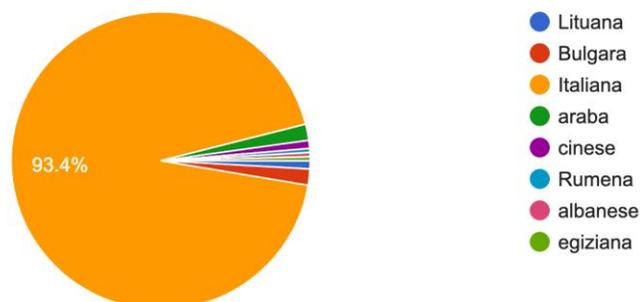
Sesso  
227 responses



### 3. Nationality

Almost all respondents were Italian nationals but there was also a minority of other nationalities (1,8% Arab, 1,8% Bulgarian, 0,9% Chinese, 0,9% Lithuanian, 0,4% Romanian, 0,4%Albanian, 0,4% Egyptian).

Nationalità  
227 responses



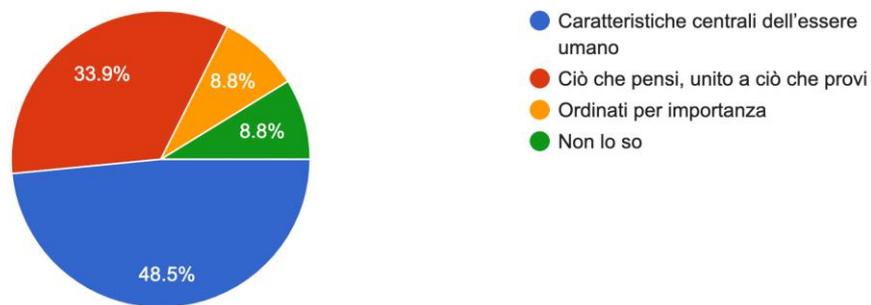
## II. VALUES

### 4. Values for you are...

Most of the respondents indicated that value for them is central characteristic of human (48,5%), and beliefs link to emotion (33,9%). The minority answered in equal parts that value for them is ordered by relative importance (8,8%) and do not know (8,8%).

Secondo te, i valori sono:

227 responses



## 5. Value importance

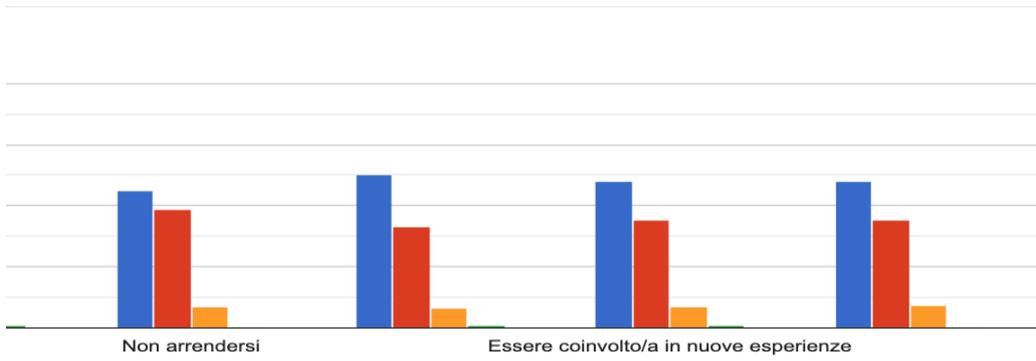
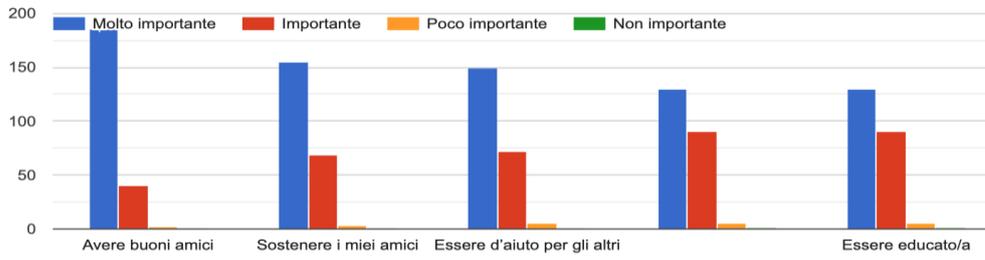
Majority of respondents believe that these fundamental values are very important for them.

The most important and the highest rated by the respondents were having good friends (185 respondents answered that it's very important); being tolerant to my friend ideas (160 res.); support my friends (155 res.).

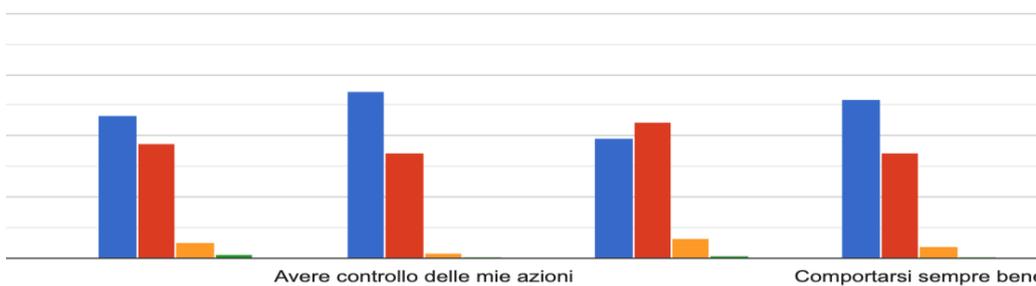
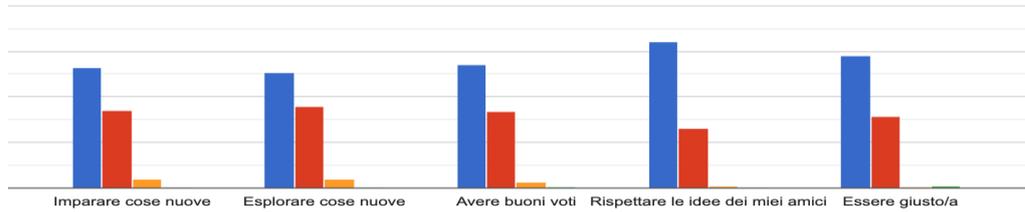
The rest important values are connected to being helpful to others (150 res.); being fair (145 res.); being responsible for my actions (136 res.); having good grades (135 res.); learning new skills (132 res.); spending lovely time with my family (130 res.); behave properly at all times (130 res.); being polite (130 res.); exploring new things (127 res.).

Also very important value to some of the respondents are being able to try something new (126 res.); having control on my actions (122 res.); being creative (120 res.); being involved in new experiences (120 res.); being able to forgive others (117 res.); do not give up (112 res.); stay humble and modest (98 res.)

Per ogni valore, indica quanto è importante per te:



Per ogni valore, indica quanto è importante per te:



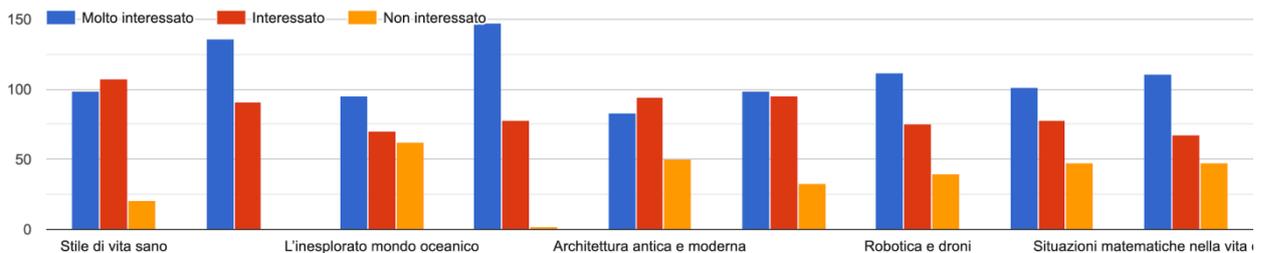
### III. INTEREST IN STEAM

6. To which extend do the following topics are interested to you?

According to the respondents the most interesting topics are climate change (very interested -147 ; interested -78 res.); use of Secondary Raw Material (very interested -136 ; interested -91 res.); math situations in everyday life (very interested -111 ; interested -68 res.); robotics and drones (very interested -112 ; interested -75 res.); healthy Lifestyle (very interested -99; interested -107res.).

Then, respondents express less interest in the unexplored world of the ocean (very interested -95 ; interested -70 res.); old and modern architecture (very interested -83 ; interested -94 res.); symbolic meaning of pictures (very interested -99 ; interested -95 res.); math equations (very interested -101; interested -78 res.).

6. Quanto sei interessato/a ai seguenti argomenti?



Respondents were then asked to indicate other topics related to Science, Technology, Engineering, Art or Math they are interested in. We found out the following answers:

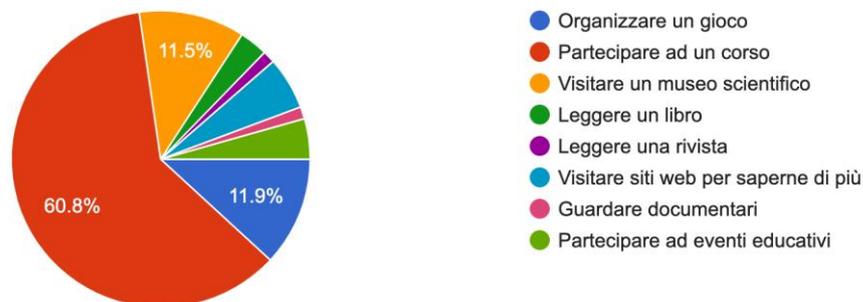
- Engineer (related to robotics, informatics, environment, naval technologies, electronics)
- Technologies (related to environment, medicine, games)
- Chemistry and biology
- Astronomy (study of the universe, stars, planets)
- Architecture
- Sport
- Programming
- Computer and videogames, top motion, artificial intelligence
- Human body and healthy nutrition
- World of animals and nature (plants, earth, oceans)
- Geology

- Archeology
- Medicine
- Arts (listening and playing music, restoration, playing in a theatre, dancing, photography, fashion)
- Languages and history of populations, ethics and philosophy
- Ecology and Bioethics
- Criminology
- Web design
- Teaching mathematics, science, history

7. What would you like to do out of school to increase your knowledge on STEAM?

Most of the respondents indicated that they want to participate in a course (60,8%); 11,9% want to program a game and 11,5% want to visit a science museum. Only 5,7% want to visit websites to learn more; attend educational events (4,4%); read a book (3,1%); watch TV documentaries (1,3%) and read a magazine (1,3%).

Cosa ti piacerebbe fare fuori dalla scuola per ampliare la tua conoscenza delle materie STEAM?  
227 responses



## SOLVING SITUATIONS

8. Your family is collecting bottle caps for the recycling. You...

The chart shows that most of the respondents (65,2%) would do the same because they care about; 26,4 would do the same because their family cares; 5,7% would do the same in order to be rewarded. A small minority of the respondents would try to use some of the bottle caps to create a do-it-yourself device for family (1,3%) while another 1,3% do not see the need.

La tua famiglia raccoglie tappi di bottiglia per il riciclo. Tu...  
227 responses



9. Your parents bring you visit an ancient village famous for its architectural beauty. You...

The chart show that 48,9% of respondents would be happy to go so in this way they will have a lot to show and tell to their friends, 32,6% would be happy to go to share an experience with their parents, 10,6%% would start making researches about the place and planning the trip; 4,4% would want to make sure if everybody is interested or if there are other alternatives and 3,5% are not interested about it.

I tuoi genitori ti portano a visitare un antico villaggio famoso per le sue bellezze architettoniche. Tu...  
227 responses



10. You struggle with math equations homework. You...

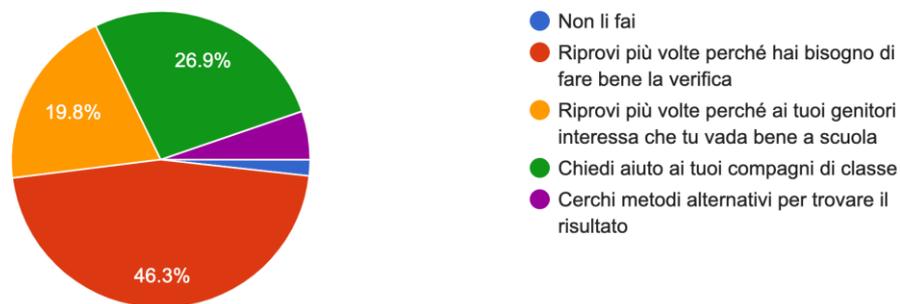
The chart shows that majority of respondents would like to try over and over again because they need to succeed in the exam (46,3%); would ask for help to their classmates (26,9%);

and would like to try over and over again because their parents care about their success in school (19,8%).

5,3% of respondents indicated that they would look up for alternative methods of resolution and only 1,8% would not do them.

Hai difficoltà con gli esercizi di matematica sulle equazioni. Tu...

227 responses



## 11. Open question: achieving a goal

In the following question, all the respondents were asked to indicate what goal they want to achieve solving problems of Science, Technology, Engineering, Art or Math, which will help them and others around them to make the world a better place. They were asked to describe a situation, share an example or note a situation. We found out the following answers:

- Make a discovery, find out something that could change the world
- Became rich/famous/important due to a discovery or something related to art, technologies, development of a new software or a new application
- Helping and protecting the planet, the environment, the universe
- Became an artist, a rock star, a pilot, an astronaut, in general achieving goals
- Saving the animals and endangered species (also thinking about an alternative way to animal testing)
- Development of robot (in order to use it in the medical area, to explore seabed and oceans, to improve video games, to fight pollution, to help elderly people)
- Development of games and videogames
- Development of technologies (related to new types of buildings, safer roads and transports)
- Fighting bullying, racism, poverty, discrimination of any kind

- Raise awareness of the zero-waste issue and man's impact on the planet, pollution and climate change
- Exploring the space in order to know every specie and the whole world in order to know more about other cultures
- Helping others
- Getting others passionate about science
  
- Bring technologies into the school and into everyday-life
- Create a shared opinion on the importance of healthy nutrition
- Making objects and artworks with recycled materials
- Fighting the pandemic, discover more about vaccines

## **MAIN CONCLUSIONS**

In general, respondents believe that values, as a central characteristic of humans, are very important for them. Majority of respondents indicated proposed fundamental values as very important.

Based on the data collected, interest in STEAM is obvious. In this regard, the most interesting topics are climate change; use of Secondary Raw Material; math situations in everyday life and robotics and drones. On the other hand, when it comes to specific topics related to Science, Technology, Engineering, Art or Math they are interested in, the main focus was on different kinds of engineering, technologies, environmental sciences and Arts. In order to increase their knowledge in STEAM most of the respondents want to participate in a course.

The research also shows that there is a positive attitude in solving the situations in the most appropriate way: respondents care about recycling; want to share their time with their parents and do not give up on difficulties, ready to try over and over again, because they need to succeed in the exam.

The most frequently reported goals that young people want to achieve solving problems of STEAM are connected to making discoveries, improving medicine through technology, planet protection, facilitating daily life and achieving the goals.

## SECOND REPORT OF THE RESEARCH IN ITALY

### INTRODUCTION

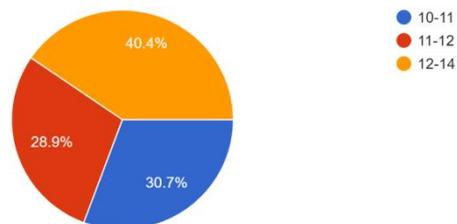
The research was carried out by means of a survey addressed to children between the ages of 10 and 14 who had the opportunity to test the video game. The aim of the study was to explore the growth of students' general skills through video games and specifically to gather concrete feedback on the output realized within the MORALSTEAM project. In this regard, the potential effectiveness of the game to improve not only hard skills but also and above all a set of soft skills related to creativity, teamwork as well as the acquisition of a value system was investigated. Below is the report on the results obtained.

#### I. SOCIO-DEMOGRAPHIC DATA

##### 1. Age

The majority of the respondents (40.4%) are between 12 and 14 years old, with the remaining part consisting of 10 to 11 year olds (30.7%) and 11 to 12 year olds (28.9%).

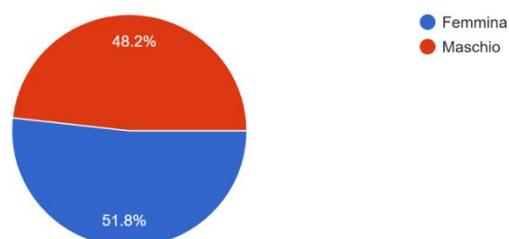
Età  
225 responses



##### 2. Gender

The number of males and females was very balanced among the respondents but, to be precise, there were more females (51.8%) than males (48.2%).

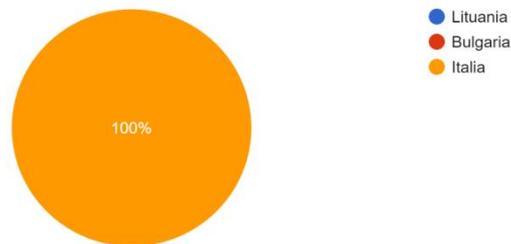
Genere  
224 responses



### 3. Nationality

All respondents were of Italian nationality.

Nazionalità  
223 responses



## II. POTENTIAL EFFECTIVENESS

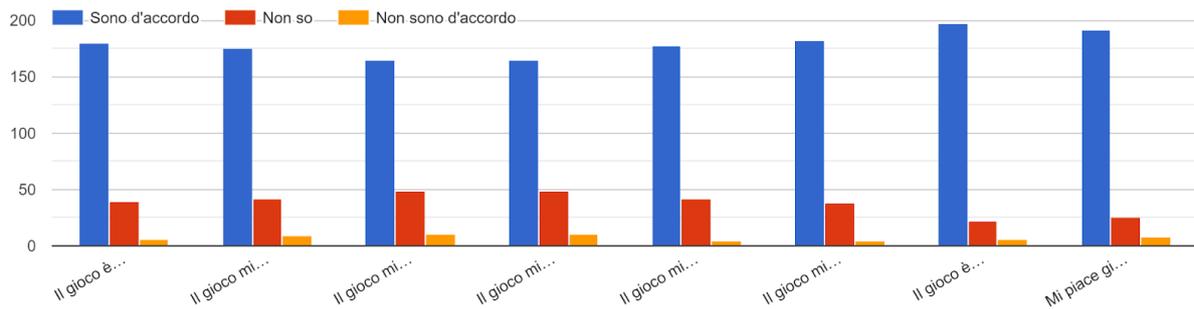
The questions aimed at investigating the potential effectiveness of the video game elicited more than average positive responses, with 73% to 87% positive, 2% to 5% negative, and 10% to 22% neutral responses. We can therefore say that on average 80% of the respondents thought the game was effective, while the rest expressed a predominantly neutral opinion.

In particular, the question that garnered the most positive results was the one defining the game as a more fun and less stressful learning tool (87% positive responses).

A milder but still positive favour was gathered by the question about the possibility of solving moral dilemmas more efficiently and learning things that one would not otherwise learn in school (73% of respondents).

Play is efficient for learning a set of values for 80% of the respondents, motivates to learn a set of values for 77% of the respondents, helps to expand one's set of values for 79% of the respondents, helps to control one's behaviour and the learning process for 80% of the respondents and is an interesting means of entertainment and teaching for 85% of the respondents.

Efficacia potenziale



### III. Usability

The questions aimed at investigating the usefulness of the video game also found more than average positive responses, with positive responses ranging from 70% to 82%, negative responses ranging from 4% to 6%, and neutral responses from 12% to 24%. We can therefore say that on average 76% of the respondents thought the game was effective, while the rest expressed a predominantly neutral opinion.

In particular, the questions that garnered the most positive responses were those about the game as a means of appreciating different perspectives (86% positive responses), relaxing and releasing anger (84%) and finding motivation to read and discover more about games (82%).

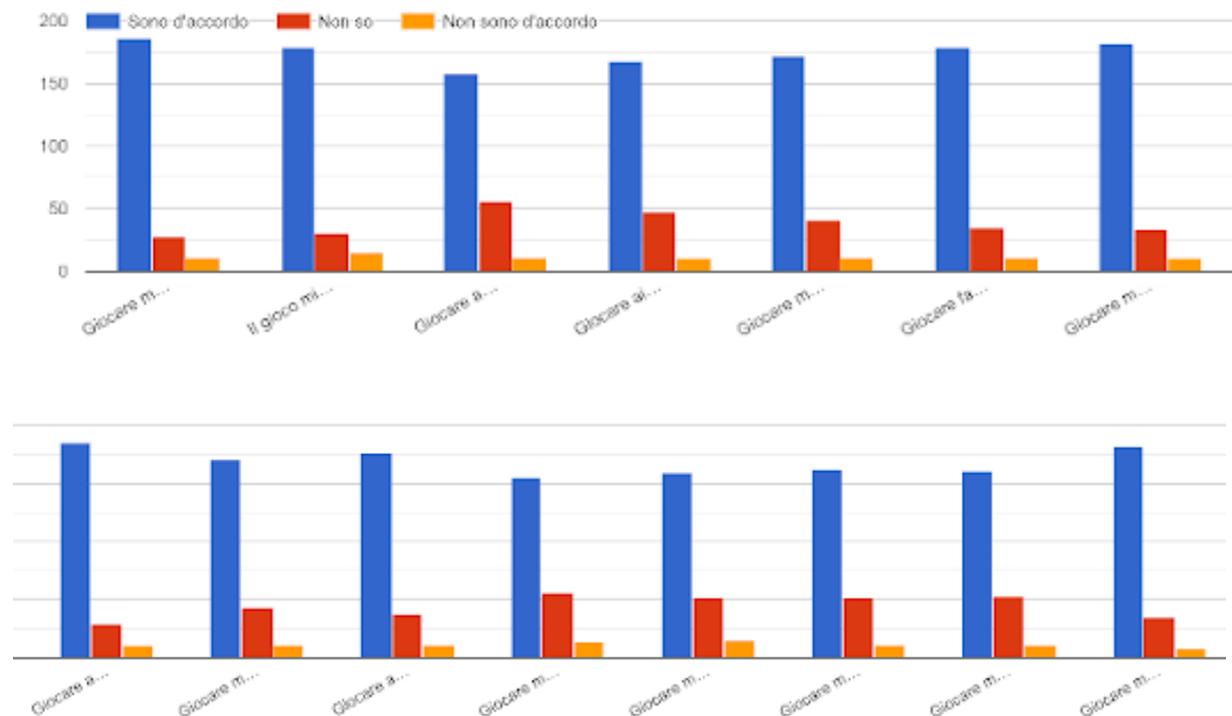
A milder but still positive favor was garnered by questions about the ability of games to stimulate creativity (70% of respondents), to make new friends (69%) and to spend more time with the family (67%).

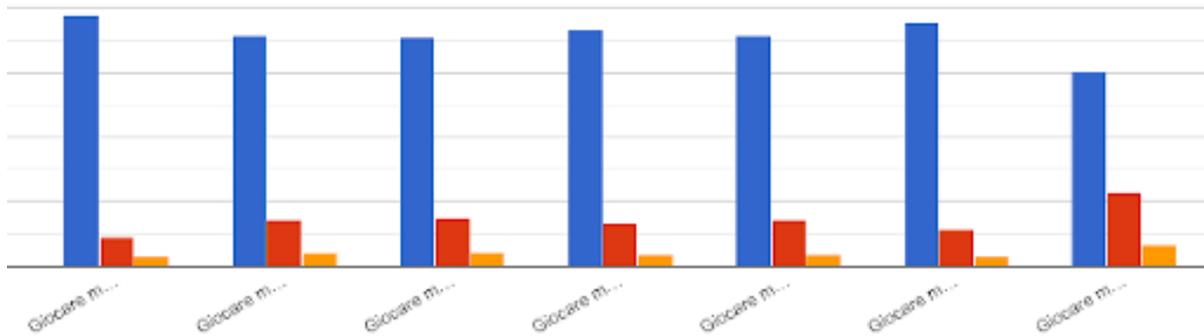
A first set of questions was aimed at investigating the usefulness of play in the learning process. In these terms, play is useful for gaining additional information beyond textbooks for 79% of respondents, for enjoying stories and getting inspired to read more for 76% of respondents, for expanding vocabulary for 79% of respondents, for making children better readers for 80% of respondents, for expanding imagination for 82% of respondents, for writing about one's own ideas for 75% of respondents.

Another set of questions sought to investigate the usefulness of play in the relational sphere and soft skills. Thus, play is useful for increasing self-confidence in play-related communication for 78% of the respondents, for listening and talking more with one's friends for 70% of the respondents, for learning to solve problems for 72% of the respondents, for working better in a team for 71% of the respondents, for building trust in one's friends and classmates for 79% of the respondents.

A final set of questions concerned the usefulness of play on a more value-related level, whereby play is useful to better understand how others interpret the world for 82% of respondents, to find inspiration to be a good person for 34% of respondents, to better understand how to learn from one's mistakes for 81% of respondents.

Utilità

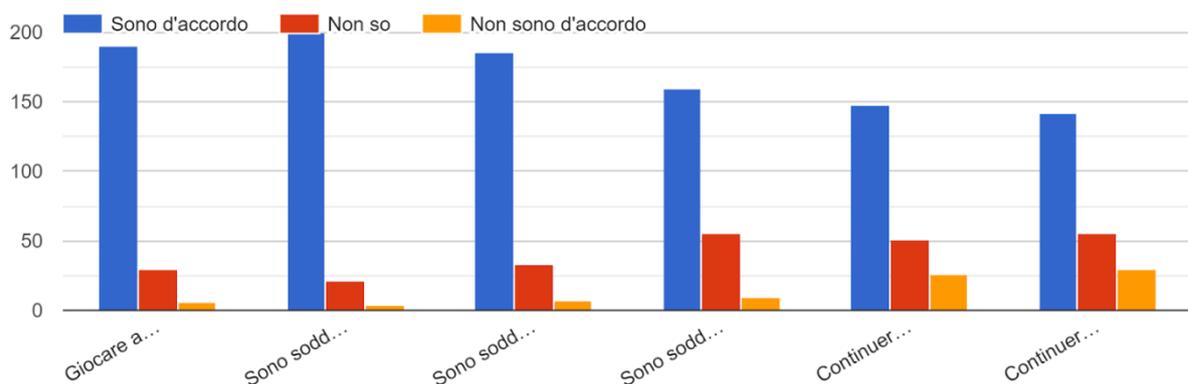




#### IV. Satisfaction

The last part of the questionnaire concerned satisfaction with the game created within the project. For the vast majority of respondents, using the game is interesting (84%). This translates into high satisfaction with the functions offered by the video game (88%) as well as with the game as a tool for learning a set of values (82%). A still positive but slightly milder flavor was expressed towards the game as a tool for learning moral dilemmas (65%). On average, 64% of the respondents are willing to continue using the game as a tool for learning moral dilemmas and/or acquiring a set of values, 23% said they were neutral and 12% said they were not willing to continue.

#### Soddisfazione



#### MAIN CONCLUSIONS

The second research successfully concluded by showing that the video game produced by the project is a quality, satisfying and useful outcome in the context of learning a set of values and moral dilemmas.

With regard to potential effectiveness, it is significant to emphasize that the question that gathered the most positive approval was the one concerning the definition of the game as a more enjoyable and less stressful learning tool. Empirical research further confirms the numerous theories on the effectiveness of play-based learning and the benefits generated by a relaxing and fun environment in terms of learning as well. In fact, this latter aspect is further confirmed by the large positive consensus gathered by the question on the usefulness of play to release anger and relax, as well as in general by the question set on the usefulness of play in the learning environment. Learning in a playful environment not only seems beneficial to learning per se but is also beneficial to the learners' psychological well-being. On the other hand, a milder but still positive consensus seems to be reached on some issues concerning the usefulness of play in the relational sphere, especially with regard to spending more time with one's family or making new friends. This aspect is not to be underestimated; the reasons could be traced back to the increasingly virtual way in which play is configured for today's youngsters. The risk that should not be underestimated is the possible loss of the real dimension of relationships, the school in this sense should educate on being together also through play and play not as closure but as openness to relationships. Lastly, we can highlight a considerable interest in gaming as a means of learning moral dilemmas and the value system, which further reinforces the relevance of game-based learning as a vehicle for more niche knowledge and interests such as those dealt with by the developed video game, and should motivate us to increasingly broaden the scope of educational games.

## **REPORT OF THE EDUCATORS RESEARCH IN ITALY**

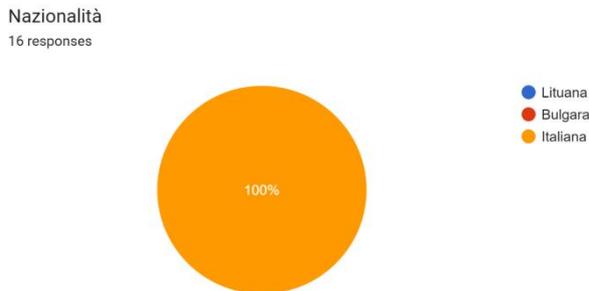
### **INTRODUCTION**

The research targeting educators was conducted through the administration of a questionnaire to the school teachers involved in the previous phases of the project. The aim of this research was to investigate the potential effectiveness of games in education, especially in terms of improving skills and facilitating the teaching process. The results of the research are given in the following report.

## I. SOCIO-DEMOGRAPHIC DATA

### 1. Nationality

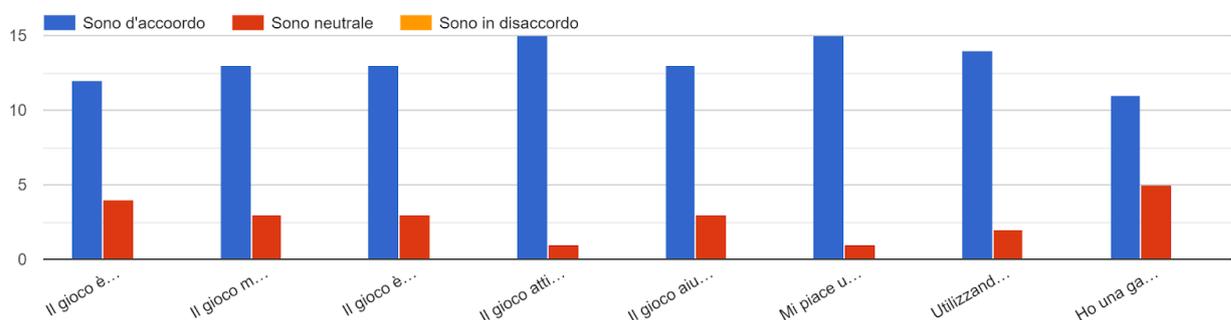
100% of the respondents were of Italian nationality.



## II. POTENTIAL EFFECTIVENESS

The survey on the potential effectiveness of playing from the point of view of the educators reported a very high average positive response. None of the questions recorded a negative answer, but neutral. Almost all educators agreed that play attracts students' attention more effectively (93%). More than 80% of the respondents agreed that playing motivates students to learn more, that it is more challenging for students, that it helps students broaden their set of values and that through games they are able to present their set of values better. On average, 70% of the respondents declared to have a wider range of moral dilemma activities using games and that play is effective in terms of learning the set of values in the classroom.

Efficacia potenziale



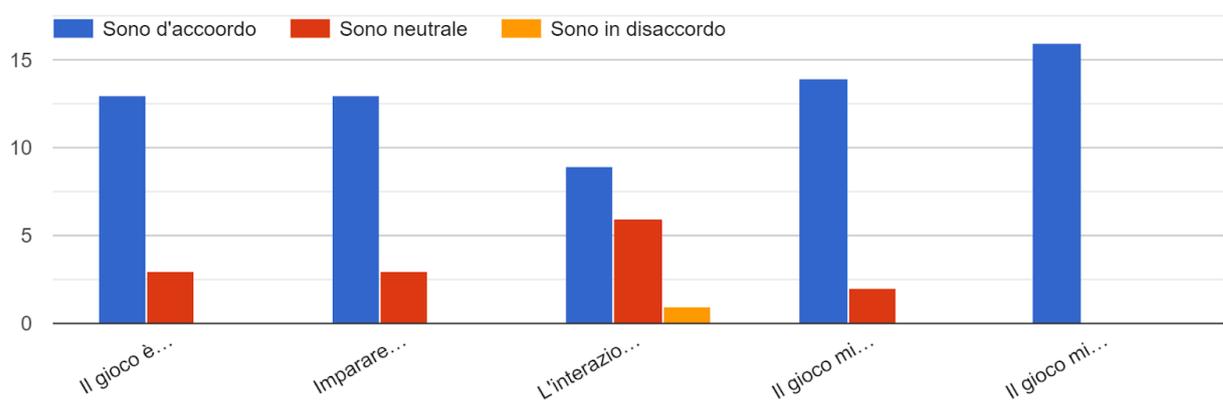
## III. USABILITY

The questions concerning usability equally encountered a positive approval among the respondents. Between 81% and 87% of the respondents stated that the game is adequate in

terms of overall usage, that learning to handle the game to learn the set of values is easy for them and that the game gives them more control over the learning process.

100% of the respondents agreed that the game is a useful support to realize a more efficient learning process, however only half of the respondents believed that the interaction with the game requires little effort for the students, the rest of the respondents being neutral or, in only one case, negative.

#### Usabilità

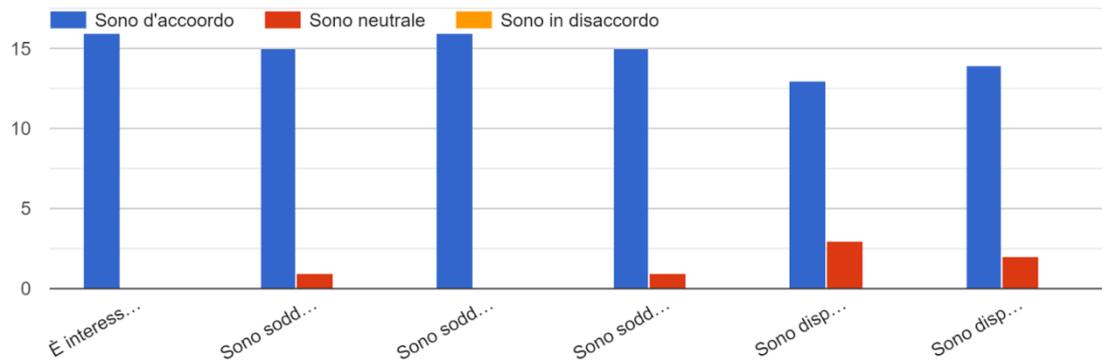


#### IV. SATISFACTION

The questions about the respondents' satisfaction with the game were very successful. All respondents found the use of games interesting and were satisfied with the game as a tool for learning a set of values. Almost all respondents (93%) are also satisfied with the functions offered by the game and with the game as a tool for learning moral dilemmas.

Approximately 85% of the respondents are willing to continue using play for learning moral dilemmas in the classroom and for the acquisition of a value set.

## Soddisfazione



## MAIN CONCLUSIONS

The research showed that educators consider games to be a useful support for the teaching and learning process, particularly due to the motivation aroused in the students involved in play. This evidence is a clear corollary to the result of the research on 10-14 year olds that supported the usefulness and effectiveness of play not only as a tool for acquiring new knowledge but also as a means of improving soft skills.

Ultimately, play appears to have a high chance to be used in the future as a tool for learning moral dilemmas and acquiring a set of values in the classroom.