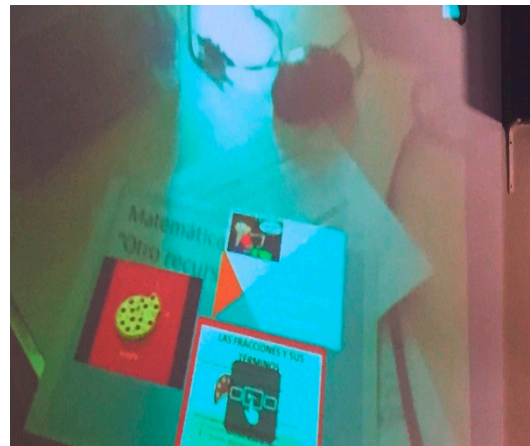


Supplementary document 1. Some photographs of the research



General explanation of the research



Application of augmented reality in class



Students completing the questionnaire

Supplementary document 2. Questionnaire PEURA-E



SIXTH GRADE PRIMARY EDUCATION STUDENTS' PERCEPTION OF THE USEFULNESS OF AUGMENTED REALITY (PEURA-E)¹

PRESENTATION

My name is Alejandro López García. I am a Primary School teacher and hold a degree in Psychopedagogy. I am currently working at the University of Murcia in the Department of Mathematics and Social Sciences Didactics. We are carrying out a research and I would, therefore, like to ask you to collaborate by answering the questions in this questionnaire.

AIM OF THE QUESTIONNAIRE

This questionnaire seeks to obtain information about the usefulness of Augmented Reality (AR) for teachers' teaching, students' learning and in addressing the curriculum contents in the main areas of Primary Education.

CONSIDERATIONS WHEN COMPLETING THE QUESTIONNAIRE

- Each item indicates how the question should be answered: marking with an X or circling the option that fits your opinion. Remember that you should only choose one option.
- You can spend as long as you need to complete the questionnaire.
- Try to be as sincere as possible in your answers.
- The data collected is confidential and anonymous, and will only be used for the research.
- You are entitled to ask for a copy of the results of this study.

THANK YOU FOR YOUR COLLABORATION!

¹Final version of the questionnaire after incorporating modifications recommended by experts. This tool is adapted to the age and level maturity of the students. In the original work the extension of some items has been simplified for the sake of space.

NAME OF CENTER: _____

Put an X in the appropriate box					
Sex: 1. Male 2. Female					
<p>Please circle the appropriate response using one of these options. There is an example. <i>1: Strongly disagree 2: Disagree 3: Neither disagree nor agree 4: Agree 5: Strongly agree</i> <i>Example: 1 2 (3) 4 5</i></p>					
Items	Responses				
1. AR allows teaching to happen via discovery.	1	2	3	4	5
2. AR can be another way for the teacher to teach knowledge as well as using books and note taking	1	2	3	4	5
3. Teachers can teach better if they also use AR in the classroom	1	2	3	4	5
4. AR can be used by teachers to build knowledge adapted to each area	1	2	3	4	5
5. AR can improve my attention in class	1	2	3	4	5
6. AR can increase my motivation in class	1	2	3	4	5
7. Working with AR helps me to understand contents better	1	2	3	4	5
8. Activities with AR encourages me to participate more in class	1	2	3	4	5
9. Good AR use helps me to collaborate with my classmates	1	2	3	4	5
10. AR can improve the quality of my learning and studying	1	2	3	4	5
AR in Spanish Language and Literature					
<p>Please circle the appropriate response using one of these options. There is an example. <i>1: Strongly disagree 2: Disagree 3: Neither disagree nor agree 4: Agree 5: Strongly agree</i> <i>Example: 1 2 (3) 4 5</i></p>					
Items	Responses				

11. The AR activity has enabled me to distinguish between descriptive, argumentative, narrative, instructive and literary texts as reading material	1	2	3	4	5
12. The AR activity included access to a wealth of texts to foster reading habits and comprehension, as well as activities for its evaluation	1	2	3	4	5
13. The AR video has shown me another way to look at reading, based on journalistic and advertising texts	1	2	3	4	5
14. The AR activity has enabled me to distinguish between information, opinion and advertising concepts in journalistic and advertising texts	1	2	3	4	5
15. The proposal has given me access to reading comprehension strategies for texts, e.g., dictionary use	1	2	3	4	5
16. Using AR to learn these types of curricular contents seems useful to me	1	2	3	4	5
AR in First Foreign Language					
<p>Please circle the appropriate response using one of these options. There is an example.</p> <p><i>1: Strongly disagree 2: Disagree 3: Neither disagree nor agree 4: Agree 5: Strongly agree</i></p> <p style="text-align: center;"><i>Example: 1 2 (3) 4 5</i></p>					
Items	Responses				
17. The AR activity has allowed me to work on the subject of peace and solidarity in the world	1	2	3	4	5
18. The AR video shows simple narratives in the present and future to work on understanding	1	2	3	4	5
19. The activity included quick strategies for understanding texts, e.g., the AR translator	1	2	3	4	5
20. The strip of images enabled me to use AR to work on nouns, pronouns, articles and demonstratives as area contents	1	2	3	4	5
21. The AR practical proposal included a blog to work with the subject through assessment activities	1	2	3	4	5
22. Using AR to learn these types of curricular contents seems useful to me	1	2	3	4	5

AR in Social Sciences

Please circle the appropriate response using one of these options. There is an example.

1: Strongly disagree 2: Disagree 3: Neither disagree nor agree 4: Agree 5: Strongly agree

Example: 1 2 (3) 4 5

Items	Responses				
23. The AR activity enabled me to discover some of Spain's cultural heritage monuments	1	2	3	4	5
24. From what I saw in the video, Europe seems to be a continent with many resources	1	2	3	4	5
25. The AR activity has helped me to understand the European Union and its main aims and values	1	2	3	4	5
26. The AR activity has helped me to learn the EU member countries and their capitals	1	2	3	4	5
27. The strip of images in AR showed information about EU institutions, government bodies and symbols in a more enjoyable way	1	2	3	4	5
28. Using AR to learn these types of curricular contents seems useful to me	1	2	3	4	5

AR in Natural Sciences

Please circle the appropriate response using one of these options. There is an example.

1: Strongly disagree 2: Disagree 3: Neither disagree nor agree 4: Agree 5: Strongly agree

Example: 1 2 (3) 4 5

Items	Responses				
29. The AR activity taught me about drugs and their main negative effects for health	1	2	3	4	5
30. The AR video has dealt with decision making related to consequences of acting good or bad.	1	2	3	4	5
31. The strip of images helped me to learn of the importance of raising awareness about alcohol, tobacco and drugs and preventing their consumption	1	2	3	4	5
32. This AR activity showed me responsible behaviors regarding healthy life practices, diet and proper functioning of the body	1	2	3	4	5
33. The AR session did not address concepts or give an explanation of harmful effects or decision making	1	2	3	4	5
34. Using AR to learn these types of curricular contents seems useful to me	1	2	3	4	5

AR in Mathematics

Please circle the appropriate response using one of these options. There is an example.

1: Strongly disagree 2: Disagree 3: Neither disagree nor agree 4: Agree 5: Strongly agree

Example: 1 2 (3) 4 5

Items	Responses				
35. This AR activity has enabled me to learn about or revise fractions and their terms	1	2	3	4	5
36. The AR video showed me graphical representations of fractions which were easy to read and understand	1	2	3	4	5
37. It has been explained to me, using the AR activity, how to order simple fractions, calculate the fraction of a number and work with equivalent fractions	1	2	3	4	5
38. The AR activity has enabled me to access a variety of contents related to fractions and also some self-assessment exercises	1	2	3	4	5
39. The AR session did not address concepts or give an explanation of fractions	1	2	3	4	5
40. Using AR to learn these types of curricular contents seems useful to me	1	2	3	4	5

Observations:

Supplementary document 3. Scale for experts to evaluate content

EVALUATION SCALE ²

Presentation of the Questionnaire:				
1. The aim of the research is stated	1	2	3	4
2. The authorship of the research is stated	1	2	3	4
3. The target participant is requested to collaborate	1	2	3	4
4. The importance of the research is explained	1	2	3	4
5. The target participant is encouraged to collaborate	1	2	3	4
6. The target participant is thanked for their collaboration	1	2	3	4
7. Anonymity and confidentiality are guaranteed	1	2	3	4

Instructions in the Questionnaire:				
8. The instructions are clear and concise	1	2	3	4
9. The target participant is requested to be respond sincerely	1	2	3	4
10. The target participant is encouraged to ask for help when in doubt	1	2	3	4

Overall Structure and Design of the Questionnaire:				
11. The number of questions is NOT excessive	1	2	3	4
12. The questions are straightforward to answer	1	2	3	4
13. The order of the questions is appropriate	1	2	3	4
14. The questionnaire is internally coherent	1	2	3	4
15. The questions are relevant to the aim of the research	1	2	3	4
16. The questionnaire clearly reflects the research variables	1	2	3	4
17. The variables are clearly coded	1	2	3	4
18. A blank space is included in the questionnaire for respondents to make any observations or clarifications they consider appropriate	1	2	3	4
19. The identification data are appropriate (sex, level of education ...)	1	2	3	4
20. The identification data appear in the most suitable position	1	2	3	4

Next we would ask you to rate two aspects of each of the questions in the questionnaire (enumerated in the central column):

- On the left, the **Appropriateness of the wording** used, given the characteristics of the target population.
- On the right, the **Appropriateness of the response options**; i.e., the appropriate number of options, their relevance to the question and the representativeness of the variability of the options.

²The creator of this scale is Professor Francisca José Serrano Pastor (2008), from the Department of Methods of Research and Diagnosis in Education of the University of Murcia (Spain). E-mail: fjserran@um.es.

<i>Appropriateness of the wording</i>				Question	<i>Appropriateness of the response options</i>			
4	3	2	1	1	1	2	3	4
4	3	2	1	2	1	2	3	4
4	3	2	1	3	1	2	3	4
4	3	2	1	4	1	2	3	4
4	3	2	1	5	1	2	3	4
4	3	2	1	6	1	2	3	4
4	3	2	1	7	1	2	3	4
4	3	2	1	8	1	2	3	4
4	3	2	1	9	1	2	3	4
4	3	2	1	10	1	2	3	4
4	3	2	1	11	1	2	3	4
4	3	2	1	12	1	2	3	4
4	3	2	1	13	1	2	3	4
4	3	2	1	14	1	2	3	4
4	3	2	1	15	1	2	3	4

Lastly, we would ask you to do an **Overall Evaluation of the Appropriateness** of the three aspects of the questionnaire listed below:

21. The research problem	1	2	3	4
22. The methodological aspects of its design	1	2	3	4
23. The characteristics of the target participants	1	2	3	4

ANY FURTHER OBSERVATIONS, CLARIFICATIONS AND EVALUATIONS:

THANK YOU FOR YOUR COLLABORATION!

Supplementary document 4. Evaluation of the contents by experts

Dimensions per blocks	Mean
Presentation of the Questionnaire:	
1. The aim of the research is stated	4.00
2. The authorship of the research is stated	4.00
3. The target participant is requested to collaborate	3.67
4. The importance of the research is explained	4.00
5. The target participant is encouraged to collaborate	3.33
6. The target participant is thanked for their collaboration	3.33
7. Anonymity and confidentiality are guaranteed	3.67
Total	3.71
Instructions in the Questionnaire	
8. These are clear and concise	3.00
9. The target participant is requested to be respond sincerely	3.33
10. The target participant is encouraged to ask for help when in doubt	3.33
Total	3.22
Overall Structure and Design of the Questionnaire:	
11. The number of questions is NOT excessive	3.33
12. The questions are straightforward to answer	3.33
13. The order of the questions is appropriate	3.33
14. The questionnaire is internally coherent	3.33
15. The questions are relevant to the aim of the research	3.67
16. The questionnaire clearly reflects the research variables	3.67
17. The variables are clearly coded	3.33
18. A blank space is included in the questionnaire for respondents to make any observations or clarifications they consider appropriate	4.00
19. The identification data are appropriate (sex, level of education ...)	4.00
20. The identification data appear in the most suitable position	3.67
Total	3.57
Appropriateness of the wording	
Items	
1. AR allows teaching to happen via discovery	4.00
2. AR can be another way for the teacher to teach knowledge as well as using books and note taking	4.00
3. Teachers can teach better if they also use AR in the classroom	4.00
4. AR can be used by teachers to build knowledge adapted to each area	4.00
5. AR can increase students' attention	4.00
6. AR can increase students' motivation	4.00
7. AR helps students to understand the contents better	4.00
8. Activities using AR encourage students to participate more in class	4.00
9. AR can help students to work in collaboration	4.00
10. AR can improve the quality of students' learning and studying	4.00
11. The AR activity has enabled me to distinguish between descriptive, argumentative, narrative, instructive and literary texts as reading material	4.00
12. The AR activity included access to a wealth of texts to foster reading habits and comprehension, as well as activities for its evaluation	4.00
13. The AR video has shown me another way to look at reading, based on journalistic and advertising texts	4.00
14. The AR activity has enabled me to distinguish between information, opinion and advertising concepts in journalistic and advertising texts	4.00

15.	The proposal has given me access to reading comprehension strategies for texts, e.g., dictionary use	3.67
16.	Using AR to learn these types of curricular contents seems useful to me	4.00
17.	The AR activity has allowed me to work on the subject of peace and solidarity in the world	4.00
18.	The AR video shows simple narratives in the present and future to work on understanding	3.67
19.	The activity included quick strategies for understanding texts, e.g., the AR translator	4.00
20.	The strip of images enabled me to use AR to work on nouns, pronouns, articles and demonstratives as area contents	4.00
21.	The AR practical proposal included a blog to work with the subject through assessment activities	4.00
22.	Using AR to learn these types of curricular contents seems useful to me	4.00
23.	The AR activity enabled me to discover some of Spain's cultural heritage monuments	3.67
24.	From what I saw in the video, Europe seems to be a continent with many resources	4.00
25.	The AR activity has helped me to understand the European Union and its main aims and values	3.67
26.	The AR activity has helped me to learn the EU member countries and their capitals	4.00
27.	The strip of images in AR showed information about EU institutions, government bodies and symbols in a more enjoyable way	4.00
28.	Using AR to learn these types of curricular contents seems useful to me	4.00
29.	The AR activity taught me about drugs and their main negative effects for health	4.00
30.	The AR video has dealt with decision making related to consequences of acting good or bad	4.00
31.	The strip of images helped me to learn of the importance of raising awareness about alcohol, tobacco and drugs and preventing their consumption	4.00
32.	This AR activity showed me responsible behaviors regarding healthy life practices, diet and proper functioning of the body	4.00
33.	The AR session did not address concepts or give an explanation of harmful effects or decision making	4.00
34.	Using AR to learn these types of curricular contents seems useful to me	4.00
35.	This AR activity has enabled me to learn about or revise fractions and their terms	4.00
36.	The AR video showed me graphical representations of fractions which were easy to read and understand	3.67
37.	It has been explained to me, using the AR activity, how to order simple fractions, calculate the fraction of a number and work with equivalent fractions	4.00
38.	The AR activity has enabled me to access a variety of contents related to fractions and also some self-assessment exercises	4.00
39.	The AR session did not address concepts or give an explanation of fractions	4.00
40.	Using AR to learn these types of curricular contents seems useful to me	4.00
	Total	3.96

Appropriateness of the response options

Items		
1.	AR allows teaching to happen via discovery	4.00
2.	AR can be another way for the teacher to teach knowledge as well as using books and note taking	4.00
3.	Teachers can teach better if they also use AR in the classroom	4.00
4.	AR can be used by teachers to build knowledge adapted to each area	4.00
5.	AR can increase students' attention	4.00
6.	AR can increase students' motivation	4.00
7.	AR helps students to understand the contents better	4.00
8.	Activities using AR encourage students to participate more in class	4.00
9.	AR can help students to work in collaboration	4.00
10.	AR can improve the quality of students' learning and studying	4.00

11. The AR activity has enabled me to distinguish between descriptive, argumentative, narrative, instructive and literary texts as reading material	4.00
12. The AR activity included access to a wealth of texts to foster reading habits and comprehension, as well as activities for its evaluation	4.00
13. The AR video has shown me another way to look at reading, based on journalistic and advertising texts	4.00
14. The AR activity has enabled me to distinguish between information, opinion and advertising concepts in journalistic and advertising texts	4.00
15. The proposal has given me access to reading comprehension strategies for texts, e.g., dictionary use	4.00
16. Using AR to learn these types of curricular contents seems useful to me	4.00
17. The AR activity has allowed me to work on the subject of peace and solidarity in the world	4.00
18. The AR video shows simple narratives in the present and future to work on understanding	4.00
19. The activity included quick strategies for understanding texts, e.g., the AR translator	4.00
20. The strip of images enabled me to use AR to work on nouns, pronouns, articles and demonstratives as area contents	4.00
21. The AR practical proposal included a blog to work with the subject through assessment activities	4.00
22. Using AR to learn these types of curricular contents seems useful to me	4.00
23. The AR activity enabled me to discover some of Spain's cultural heritage monuments	4.00
24. From what I saw in the video, Europe seems to be a continent with many resources	4.00
25. The AR activity has helped me to understand the European Union and its main aims and values	4.00
26. The AR activity has helped me to learn the EU member countries and their capitals	4.00
27. The strip of images in AR showed information about EU institutions, government bodies and symbols in a more enjoyable way	4.00
28. Using AR to learn these types of curricular contents seems useful to me	4.00
29. The AR activity taught me about drugs and their main negative effects for health	4.00
30. The AR video has dealt with decision making related to consequences of acting good or bad	4.00
31. The strip of images helped me to learn of the importance of raising awareness about alcohol, tobacco and drugs and preventing their consumption	4.00
32. This AR activity showed me responsible behaviors regarding healthy life practices, diet and proper functioning of the body	4.00
33. The AR session did not address concepts or give an explanation of harmful effects or decision making	4.00
34. Using AR to learn these types of curricular contents seems useful to me	4.00
35. This AR activity has enabled me to learn about or revise fractions and their terms	4.00
36. The AR video showed me graphical representations of fractions which were easy to read and understand	4.00
37. It has been explained to me, using the AR activity, how to order simple fractions, calculate the fraction of a number and work with equivalent fractions	4.00
38. The AR activity has enabled me to access a variety of contents related to fractions and also some self-assessment exercises	4.00
39. The AR session did not address concepts or give an explanation of fractions	4.00
40. Using AR to learn these types of curricular contents seems useful to me	4.00
Total	4.00
Overall Evaluation of the Appropriateness of the three aspects of the questionnaire listed below:	
21. The research problem	4.00
22. The methodological aspects of its design	4.00
23. The characteristics of the target participants	3.67
Total	3.89

Supplementary document 5. Evaluation of the usefulness of AR by students.

5.A. Evaluation of the usefulness of AR globally.

Overall	Total	Strongly disagree	Disagree	Neither disagree nor agree	Agree	Strongly agree	Md.	M	Sd.
Teaching									
1. AR allows teaching to happen via discovery									
Frq.	106	3	3	8	29	63	5.00	4.38	.951
%	100	2.8	2.8	7.5	27.4	59.4			
2. AR can be another way for the teacher to teach knowledge as well as using books and note taking									
Frq.	106	1	0	9	31	65	5.00	4.50	.734
%	100	.9	0	8.5	29.2	61.3			
3. Teachers can teach better if they also use AR in the classroom									
Frq.	106	3	5	11	48	39	4.00	4.08	.957
%	100	2.8	4.7	10.4	45.3	36.8			
4. AR can be used by teachers to build knowledge adapted to each area									
Frq.	106	2	1	13	38	52	4.00	4.29	.862
%	100	1.9	.9	12.3	35.8	49.1			
Learning									
5. AR can increase students' attention									
Frq.	106	5	2	12	39	48	4.00	4.16	1.025
%	100	4.7	1.9	11.3	36.8	45.3			
6. AR can increase students' motivation									
Frq.	106	4	6	8	30	58	5.00	4.25	1.067
%	100	3.8	5.7	7.5	28.3	54.7			
7. AR helps students to understand the contents better									
Frq.	106	4	8	13	38	43	4.00	4.02	1.087
%	100	3.8	7.5	12.3	35.8	40.6			
8. Activities using AR encourage students to participate more in class									
Frq.	106	6	6	12	43	39	4.00	3.97	1.108
%	100	5.7	5.7	11.3	40.6	36.8			
9. AR can help students to work in collaboration									
Frq.	106	0	4	20	42	40	4.00	4.11	.843
%	100	0	3.8	18.9	39.6	37.7			
10. AR can improve the quality of students' learning and studying									
Frq.	106	4	3	18	32	49	4.00	4.12	1.039
%	100	3.8	2.8	17.0	30.2	46.2			
Spanish Language and Literature									
11. The AR activity has enabled me to distinguish between descriptive, argumentative, narrative, instructive and literary texts as reading material									
Frq.	106	1	2	21	51	31	4.00	4.03	.810
%	100	.9	1.9	19.8	48.1	29.2			
12. The AR activity included access to a wealth of texts to foster reading habits and comprehension, as well as activities for its evaluation									
Frq.	106	0	1	11	53	41	4.00	4.26	.680
%	100	0	.9	10.4	50.0	38.7			
13. The AR video has shown me another way to look at reading, based on journalistic and advertising texts									
Frq.	106	1	2	13	42	48	4.00	4.26	.820
%	100	.9	1.9	12.3	39.6	45.3			
14. The AR activity has enabled me to distinguish between information, opinion and advertising concepts in journalistic and advertising texts									
Frq.	106	2	5	21	42	36	4.00	3.99	.951
%	100	1.9	4.7	19.8	39.6	34.0			
15. The proposal has given me access to reading comprehension strategies for texts, e.g., dictionary use									
Frq.	106	3	6	12	41	44	4.00	4.10	1.004
%	100	2.8	5.7	11.3	38.7	41.5			
16. Using AR to learn these types of curricular contents seems useful to me									
Frq.	106	0	3	11	27	65	5.00	4.45	.794
%	100	0	2.8	10.4	25.5	61.3			
First Foreign Language									
17. The AR activity has allowed me to work on the subject of peace and solidarity in the world									
Frq.	106	2	4	20	39	41	4.00	4.07	.949
%	100	1.9	3.8	18.9	36.8	38.7			
18. The AR video shows simple narratives in the present and future to work on understanding									
Frq.	106	0	2	13	49	42	4.00	4.24	.737
%	100	0	1.9	12.3	46.2	39.6			

19.	The activity included quick strategies for understanding texts, e.g., the AR translator									
Frq.	106	0	2	11	37	56	5.00	4.39	.751	
%	100	0	1.9	10.4	34.9	52.8				
20.	The strip of images enabled me to use AR to work on nouns, pronouns, articles and demonstratives as area contents									
Frq.	106	5	5	23	32	41	4.00	3.93	1.106	
%	100	4.7	4.7	21.7	30.2	38.7				
21.	The AR practical proposal included a blog to work with the subject through assessment activities									
Frq.	106	1	5	19	42	39	4.00	4.07	.908	
%	100	.9	4.7	17.9	39.6	36.8				
22.	Using AR to learn these types of curricular contents seems useful to me									
Frq.	106	1	4	11	31	59	5.00	4.35	.884	
%	100	.9	3.8	10.4	29.2	55.7				

Social Sciences

23.	The AR activity enabled me to discover some of Spain's cultural heritage monuments									
Frq.	106	0	2	3	26	75	5.00	4.64	.635	
%	100	0	1.9	2.8	24.5	70.8				
24.	From what I saw in the video, Europe seems to be a continent with many resources									
Frq.	106	2	6	12	43	43	4.00	4.12	.953	
%	100	1.9	5.7	11.3	40.6	40.6				
25.	The AR activity has helped me to understand the European Union and its main aims and values									
Frq.	106	2	1	23	36	44	4.00	4.12	.912	
%	100	1.9	.9	21.7	34.0	41.5				
26.	The AR activity has helped me to learn the EU member countries and their capitals									
Frq.	106	3	4	12	37	50	4.00	4.20	.980	
%	100	2.8	3.8	11.3	34.9	47.2				
27.	The strip of images in AR showed information about EU institutions, government bodies and symbols in a more enjoyable way									
Frq.	106	1	8	12	36	49	4.00	4.17	.971	
%	100	.9	7.5	11.3	34.0	46.2				
28.	Using AR to learn these types of curricular contents seems useful to me									
Frq.	106	2	4	11	28	61	5.00	4.34	.945	
%	100	1.9	3.8	10.4	26.4	57.5				

Natural Sciences

29.	The AR activity taught me about drugs and their main negative effects for health									
Frq.	106	1	1	14	17	73	5.00	4.51	.831	
%	100	.9	.9	13.2	16.0	68.9				
30.	The AR video has dealt with decision making related to consequences of acting good or bad									
Frq.	106	1	2	8	28	67	5.00	4.49	.796	
%	100	.9	1.9	7.5	26.4	63.2				
31.	The strip of images helped me to learn of the importance of raising awareness about alcohol, tobacco and drugs and preventing their consumption									
Frq.	106	0	3	8	33	62	5.00	4.45	.758	
%	100	0	2.8	7.5	31.1	58.5				
32.	This AR activity showed me responsible behaviors regarding healthy life practices, diet and proper functioning of the body									
Frq.	106	0	1	9	35	61	5.00	4.47	.693	
%	100	0	.9	8.5	33.0	57.5				
33.	The AR session did not address concepts or give an explanation of harmful effects or decision making									
Frq.	106	92	10	4	0	0	1.00	1.17	.467	
%	100	86.8	9.4	3.8	0	0				
34.	Using AR to learn these types of curricular contents seems useful to me									
Frq.	106	1	1	3	25	76	5.00	4.64	.679	
%	100	.9	.9	2.8	23.6	71.7				

Mathematics

35.	This AR activity has enabled me to learn about or revise fractions and their terms									
Frq.	106	2	2	11	32	59	5.00	4.36	.886	
%	100	1.9	1.9	10.4	30.2	55.7				
36.	The AR video showed me graphical representations of fractions which were easy to read and understand									
Frq.	106	0	2	5	37	62	5.00	4.50	.680	
%	100	0	1.9	4.7	34.9	58.5				
37.	It has been explained to me, using the AR activity, how to order simple fractions, calculate the fraction of a number and work with equivalent fractions									
Frq.	106	4	2	8	39	53	4.50	4.27	.961	
%	100	3.8	1.9	7.5	36.8	50.0				
38.	The AR activity has enabled me to access a variety of contents related to fractions and also some self-assessment exercises									
Frq.	106	0	3	7	32	64	5.00	4.48	.746	
%	100	0	2.8	6.6	30.2	60.4				
39.	The AR session did not address concepts or give an explanation of fractions									
Frq.	106	98	8	0	0	0	1.00	1.08	.265	
%	100	92.5	7.5	0	0	0				
40.	Using AR to learn these types of curricular contents seems useful to me									
Frq.	106	1	4	7	29	65	5.00	4.44	.852	
%	100	.9	3.8	6.6	27.4	61.3				

*Frq.: Frequency; %: Percentage

5.B. Document Evaluation of the usefulness of AR according to sex.

Sex	Total	Strongly disagree	Disagree	Neither disagree nor agree	Agree	Strongly agree	Md.	M	Sd.	
Teaching										
1. AR allows teaching to happen via discovery										
Masc.	Frq.	58	2	1	6	16	33	5.00	4.33	.980
	%	100	3.4	1.7	10.3	27.6	56.9			
Fem.	Frq.	48	1	2	2	13	30	5.00	4.44	.920
	%	100	2.1	4.2	4.2	27.1	62.5			
2. AR can be another way for the teacher to teach knowledge as well as using books and note taking										
Masc.	Frq.	58	0	0	6	19	33	5.00	4.47	.681
	%	100	0	0	10.3	32.8	56.9			
Fem.	Frq.	48	1	0	3	12	32	5.00	4.54	.798
	%	100	2.1	0	6.3	25.0	66.7			
3. Teachers can teach better if they also use AR in the classroom										
Masc.	Frq.	58	2	4	6	25	21	4.00	4.02	1.034
	%	100	3.4	6.9	10.3	43.1	36.2			
Fem.	Frq.	48	1	1	5	23	18	4.00	4.17	.859
	%	100	2.1	2.1	10.4	47.9	37.5			
4. AR can be used by teachers to build knowledge adapted to each area										
Masc.	Frq.	58	2	0	8	22	26	4.00	4.21	.932
	%	100	3.4	0	13.8	37.9	44.8			
Fem.	Frq.	48	0	1	5	16	26	5.00	4.40	.765
	%	100	0	2.1	10.4	33.3	54.2			
Learning										
5. AR can increase students' attention										
Masc.	Frq.	58	4	1	9	12	32	5.00	4.16	1.182
	%	100	6.9	1.7	15.5	20.7	55.2			
Fem.	Frq.	48	1	1	3	27	16	4.00	4.17	.808
	%	100	2.1	2.1	6.3	56.3	33.3			
6. AR can increase students' motivation										
Masc.	Frq.	58	4	5	5	12	32	5.00	4.09	1.274
	%	100	6.9	8.6	8.6	20.7	55.2			
Fem.	Frq.	48	0	1	3	18	26	5.00	4.44	.712
	%	100	0	2.1	6.3	37.5	54.2			
7. AR helps students to understand the contents better										
Masc.	Frq.	58	3	4	7	22	22	4.00	3.97	1.123
	%	100	5.2	6.9	12.1	37.9	37.9			
Fem.	Frq.	48	1	4	6	16	21	4.00	4.08	1.048
	%	100	2.1	8.3	12.5	33.3	43.8			
8. Activities using AR encourage students to participate more in class										
Masc.	Frq.	58	5	5	6	21	21	4.00	3.83	1.258
	%	100	8.6	8.6	10.3	36.2	36.2			
Fem.	Frq.	48	1	1	6	22	18	4.00	4.15	.875
	%	100	2.1	2.1	12.5	45.8	37.5			
9. AR can help students to work in collaboration										
Masc.	Frq.	58	0	4	8	22	24	4.00	4.14	.907
	%	100	0	6.9	13.8	37.9	41.4			
Fem.	Frq.	48	0	0	12	20	16	4.00	4.08	.767
	%	100	0	0	25.0	41.7	33.3			
10. AR can improve the quality of students' learning and studying										
Masc.	Frq.	58	2	3	9	16	28	4.00	4.12	1.077
	%	100	3.4	5.2	15.5	27.6	48.3			
Fem.	Frq.	48	2	0	9	16	21	4.00	4.13	1.003
	%	100	4.2	0	18.8	33.3	43.8			
Spanish Language and Literature										
11. The AR activity has enabled me to distinguish between descriptive, argumentative, narrative, instructive and literary texts as reading material										
Masc.	Frq.	58	1	1	11	29	16	4.00	4.00	.838
	%	100	1.7	1.7	19.0	50.0	27.6			
Fem.	Frq.	48	0	1	10	22	15	4.00	4.06	.783
	%	100	0	2.1	20.8	45.8	31.3			
12. The AR activity included access to a wealth of texts to foster reading habits and comprehension, as well as activities for its evaluation										
Masc.	Frq.	58	0	1	3	30	24	4.00	4.33	.659
	%	100	0	1.7	5.2	51.7	41.4			
Fem.	Frq.	48	0	0	8	23	17	4.00	4.19	.704
	%	100	0	0	16.7	47.9	35.4			

13. The AR video has shown me another way to look at reading, based on journalistic and advertising texts										
Masc.	Frq.	58	0	2	8	17	31	5.00	4.33	.846
	%	100	0	3.4	13.8	29.3	53.4			
Fem.	Frq.	48	1	0	5	25	17	4.00	4.19	.790
	%	100	2.1	0	10.4	52.1	35.4			
14. The AR activity has enabled me to distinguish between information, opinion and advertising concepts in journalistic and advertising texts										
Masc.	Frq.	58	2	3	10	18	25	4.00	4.05	1.067
	%	100	3.4	5.2	17.2	31.0	43.1			
Fem.	Frq.	48	0	2	11	24	11	4.00	3.92	.794
	%	100	0	4.2	22.9	50.0	22.9			
15. The proposal has given me access to reading comprehension strategies for texts, e.g., dictionary use										
Masc.	Frq.	58	3	4	3	25	23	4.00	4.05	1.099
	%	100	5.2	6.9	5.2	43.1	39.7			
Fem.	Frq.	48	0	2	9	16	21	4.00	4.17	.883
	%	100	0	4.2	18.8	33.3	43.8			
16. Using AR to learn these types of curricular contents seems useful to me										
Masc.	Frq.	58	0	3	6	13	36	5.00	4.41	.879
	%	100	0	5.2	10.3	22.4	62.1			
Fem.	Frq.	48	0	0	5	14	29	5.00	4.50	.684
	%	100	0	0	10.4	29.2	60.4			

First Foreign Language

17. The AR activity has allowed me to work on the subject of peace and solidarity in the world										
Masc.	Frq.	58	2	3	14	19	20	4.00	3.90	1.054
	%	100	3.4	5.2	24.1	32.8	34.5			
Fem.	Frq.	48	0	1	6	20	21	4.00	4.27	.765
	%	100	0	2.1	12.5	41.7	43.8			
18. The AR video shows simple narratives in the present and future to work on understanding										
Masc.	Frq.	58	0	2	4	26	26	4.00	4.31	.754
	%	100	0	3.4	6.9	44.8	44.8			
Fem.	Frq.	48	0	0	9	23	16	4.00	4.15	.714
	%	100	0	0	18.8	47.9	33.3			
19. The activity included quick strategies for understanding texts, e.g., the AR translator										
Masc.	Frq.	58	0	1	2	23	32	5.00	4.48	.655
	%	100	0	1.7	3.4	39.7	55.2			
Fem.	Frq.	48	0	1	9	14	24	4.50	4.27	.844
	%	100	0	2.1	18.8	29.2	50.0			
20. The strip of images enabled me to use AR to work on nouns, pronouns, articles and demonstratives as area contents										
Masc.	Frq.	58	3	4	11	17	23	4.00	3.91	1.159
	%	100	5.2	6.9	19.0	29.3	39.7			
Fem.	Frq.	48	2	1	12	15	18	4.00	3.96	1.051
	%	100	4.2	2.1	25.0	31.3	37.5			
21. The AR practical proposal included a blog to work with the subject through assessment activities										
Masc.	Frq.	58	1	5	6	20	26	4.00	4.12	1.027
	%	100	1.7	8.6	10.3	34.5	44.8			
Fem.	Frq.	48	0	0	13	22	13	4.00	4.00	.744
	%	100	0	0	27.1	45.8	27.1			
22. Using AR to learn these types of curricular contents seems useful to me										
Masc.	Frq.	58	0	4	5	19	30	5.00	4.29	.899
	%	100	0	6.9	8.6	32.8	51.7			
Fem.	Frq.	48	1	0	6	12	29	5.00	4.42	.871
	%	100	2.1	0	12.5	25.0	60.4			

Social Sciences

23. The AR activity enabled me to discover some of Spain's cultural heritage monuments										
Masc.	Frq.	58	0	0	2	10	46	5.00	4.76	.506
	%	100	0	0	3.4	17.2	79.3			
Fem.	Frq.	48	0	2	1	16	29	5.00	4.50	.744
	%	100	0	4.2	2.1	33.3	60.4			
24. From what I saw in the video, Europe seems to be a continent with many resources										
Masc.	Frq.	58	2	3	7	19	27	4.00	4.14	1.050
	%	100	3.4	5.2	12.1	32.8	46.6			
Fem.	Frq.	48	0	3	5	24	16	4.00	4.10	.831
	%	100	0	6.3	10.4	50.0	33.3			
25. The AR activity has helped me to understand the European Union and its main aims and values										
Masc.	Frq.	58	2	1	10	19	26	4.00	4.14	.999
	%	100	3.4	1.7	17.2	32.8	44.8			
Fem.	Frq.	48	0	0	13	17	18	4.00	4.10	.805
	%	100	0	0	27.1	35.4	37.5			
26. The AR activity has helped me to learn the EU member countries and their capitals										
Masc.	Frq.	58	3	3	9	15	28	4.00	4.07	1.153
	%	100	5.2	5.2	15.5	25.9	48.3			
Fem.	Frq.	48	0	1	3	22	22	4.00	4.35	.699
	%	100	0	2.1	6.3	45.8	45.8			

27. The strip of images in AR showed information about EU institutions, government bodies and symbols in a more enjoyable way										
Masc.	Frq.	58	1	6	7	21	23	4.00	4.02	1.051
	%	100	1.7	10.3	12.1	36.2	39.7			
Fem.	Frq.	48	0	2	5	15	26	5.00	4.35	.838
	%	100	0	4.2	10.4	31.3	54.2			
28. Using AR to learn these types of curricular contents seems useful to me										
Masc.	Frq.	58	2	3	3	15	35	5.00	4.34	1.035
	%	100	3.4	5.2	5.2	25.9	60.3			
Fem.	Frq.	48	0	1	8	13	26	5.00	4.33	.834
	%	100	0	2.1	16.7	27.1	54.2			

Natural Sciences

29. The AR activity taught me about drugs and their main negative effects for health										
Masc.	Frq.	58	1	0	9	7	41	5.00	4.50	.884
	%	100	1.7	0	15.5	12.1	70.7			
Fem.	Frq.	48	0	1	5	10	32	5.00	4.52	.772
	%	100	0	2.1	10.4	20.8	66.7			
30. The AR video has dealt with decision making related to consequences of acting good or bad										
Masc.	Frq.	58	1	1	7	11	38	5.00	4.45	.902
	%	100	1.7	1.7	12.1	19.0	65.5			
Fem.	Frq.	48	0	1	1	17	29	5.00	4.54	.651
	%	100	0	2.1	2.1	35.4	60.4			
31. The strip of images helped me to learn of the importance of raising awareness about alcohol, tobacco and drugs and preventing their consumption										
Masc.	Frq.	58	0	2	5	19	32	5.00	4.40	.793
	%	100	0	3.4	8.6	32.8	55.2			
Fem.	Frq.	48	0	1	3	14	30	5.00	4.52	.714
	%	100	0	2.1	6.3	29.2	62.5			
32. This AR activity showed me responsible behaviors regarding healthy life practices, diet and proper functioning of the body										
Masc.	Frq.	58	0	0	9	20	29	4.50	4.34	.739
	%	100	0	0	15.5	34.5	50.0			
Fem.	Frq.	48	0	1	0	15	32	5.00	4.63	.606
	%	100	0	2.1	0	31.3	66.7			
33. The AR session did not address concepts or give an explanation of harmful effects or decision making										
Masc.	Frq.	58	52	5	1	0	0	1.00	1.12	.378
	%	100	89.7	8.6	1.7	0	0			
Fem.	Frq.	48	40	5	3	0	0	1.00	1.23	.555
	%	100	83.3	10.4	6.3	0	0			
34. Using AR to learn these types of curricular contents seems useful to me										
Masc.	Frq.	58	1	1	1	11	44	5.00	4.66	.762
	%	100	1.7	1.7	1.7	19.0	75.9			
Fem.	Frq.	48	0	0	2	14	32	5.00	4.63	.570
	%	100	0	0	4.2	29.2	66.7			

Mathematics

35. This AR activity has enabled me to learn about or revise fractions and their terms										
Masc.	Frq.	58	1	2	5	16	34	5.00	4.38	.914
	%	100	1.7	3.4	8.6	27.6	58.6			
Fem.	Frq.	48	1	0	6	16	25	5.00	4.33	.859
	%	100	2.1	0	12.5	33.3	52.1			
36. The AR video showed me graphical representations of fractions which were easy to read and understand										
Masc.	Frq.	58	0	1	3	16	38	5.00	4.57	.678
	%	100	0	1.7	5.2	27.6	65.5			
Fem.	Frq.	48	0	1	2	21	24	4.50	4.42	.679
	%	100	0	2.1	4.2	43.8	50.0			
37. It has been explained to me, using the AR activity, how to order simple fractions, calculate the fraction of a number and work with equivalent fractions										
Masc.	Frq.	58	2	0	5	23	28	4.00	4.29	.899
	%	100	3.4	0	8.6	39.7	48.3			
Fem.	Frq.	48	2	2	3	16	25	5.00	4.25	1.042
	%	100	4.2	4.2	6.3	33.3	52.1			
38. The AR activity has enabled me to access a variety of contents related to fractions and also some self-assessment exercises										
Masc.	Frq.	58	0	2	4	17	35	5.00	4.47	.777
	%	100	0	3.4	6.9	29.3	60.3			
Fem.	Frq.	48	0	1	3	15	29	5.00	4.50	.715
	%	100	0	2.1	6.3	31.3	60.4			
39. The AR session did not address concepts or give an explanation of fractions										
Masc.	Frq.	58	54	4	0	0	0	1.00	1.07	.256
	%	100	93.1	6.9	0	0	0			
Fem.	Frq.	48	44	4	0	0	0	1.00	1.08	.279
	%	100	91.7	8.3	0	0	0			
40. Using AR to learn these types of curricular contents seems useful to me										
Masc.	Frq.	58	1	3	4	15	35	5.00	4.38	.952
	%	100	1.7	5.2	6.9	25.9	60.3			
Fem.	Frq.	48	0	1	3	14	30	5.00	4.52	.714
	%	100	0	2.1	6.3	29.2	62.5			

*Frq.: Frequency; %: Percentage