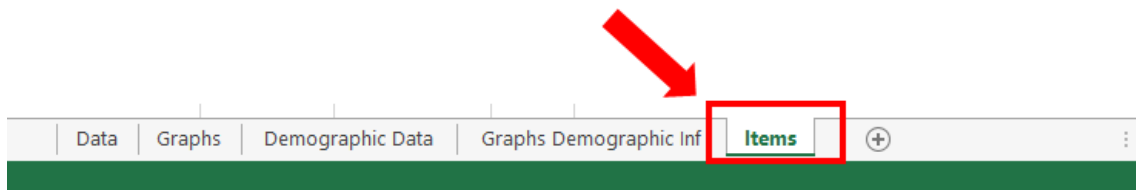


Instructions for use of MEEGA+ Data Analysis Spreadsheet

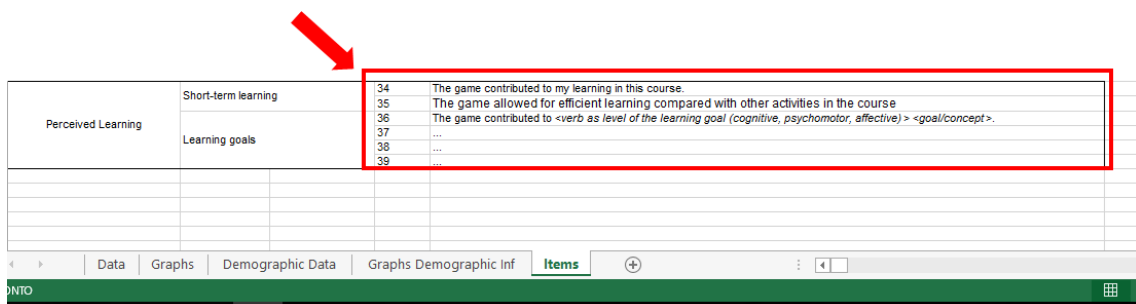
The MEEGA + data analysis worksheet uses formula and charting features available only in Microsoft Excel (desktop version). Using the spreadsheet in other software may have configuration problems.

Step 1. Insert the description of the items according to the learning goals of the evaluated game.

Select the "Items" spreadsheet.



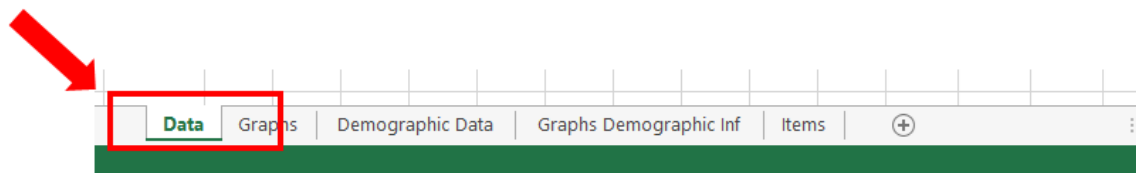
Insert from the line (33 for non-digital games and 36 for digital games) the description of the items according to the learning goals.



Step 2.

Insert the responses to the questionnaire of the items regarding Player Experience and Perceived Learning.

Select the "Data analysis" spreadsheet.



Typing should follow the following scale:

Insert -2, when the response is "strongly disagree".

Insert -1 when the response is "disagree".

Insert 0, when the response is "neither disagree nor agree."

Insert 1, when the response is "agree".

Insert 2, when the response is "strongly agree".

Each line represents the responses of a questionnaire answered by a student. Each column relates to a questionnaire item. The order of items (number of columns) is that of the questionnaire.

SPREADSHEET FOR DATA ANALYSIS OF NON-DIGITAL GAMES

GAME TITLE: _____

Insert 2, when the response is "strongly disagree"; Insert 1 when the response is "disagree"; Insert 0 when the response is "neither disagree nor agree"; Insert 1 when the response is "agree"; Insert 2 when the response is "strongly agree"

Students' responses	Course/Date	PLAYER EXPERIENCE																																				PERC	
		Usability											Confidence		Challenge			Satisfaction			Social Interaction			Fun		Focused Attention			Relevance			Short-term learning							
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35			
1		2	1	1	1	1	1	1	2	1	2	2	2	2	1	1	1	1	2	2	2	0	0	1	1	1	1	2	2	1	1	0	1	2	1	1	2	1	
2		0	0	2	2	2	2	2	0	1	2	0	0	2	2	0	1	2	2	0	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
3		1	1	2	2	2	1	1	1	1	1	2	2	1	1	1	2	0	2	1	2	1	2	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1
4		0	0	1	1	1	1	1	0	0	0	0	2	2	1	1	1	0	0	1	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5		2	2	0	1	0	1	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
6		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
7		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
8		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
9		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
10		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
11		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
12		0	1	0	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
13		2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
14		2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
15		1	1	0	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
16		2	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
17		2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
18		-1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
19		-1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
20		1	1	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21																																							
22																																							
23																																							
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31																																							
32																																							
33																																							
34																																							
35																																							
36																																							

Each line corresponds to a student. The responses of each questionnaire are typed in a line. See the examples.

Each item related to learning goals should also be in a column. You must create new columns if it exceeds the already prepared columns (36 for non-digital games or 39 games to digital).

		PERCEIVED LEARNING										
		Short-term learning				Learning goals						
Item	32	33	34	35	36	37	38	39	...			
1	2	1	2	2	1							
2	1	2	2	1	1							
3	1	1	2	2	1							
4	1	2	1	1	1							
5	-2	1	1	2	1							
6	0	2	-2	2	1							
7	0	2	2	1	1							
8	0	1	1	2	1							
9	-2	2	2	2	1							
10	0	2	-1	2	1							
11	0	2	-2	0	1							
12	0	0	2	-2	2							
13	0	-2	2	1	2							
14	1	1	2	2	2							
15	2	2	1	1	1							
16	0	1	2	2	2							
17	1	2	1	2	1							
18	0	2	2	2	2							
19	1	1	2	1	1							
20	0	-1	1	1	2							

You must create new columns if it exceeds the already prepared columns (36 for non-digital games or 39 games to digital)

If added new columns, you must extend the formulas (average, median, frequency of responses and percentage) for the new columns.

0	0,80	1,15	1,75	0,80	1,05	0,30	1,20	1,15	1,35	0,70	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!		
1	2	2	2	2	2	2	2	2	2	2	0	0	0	0	0	0
2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
3	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
4	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
5	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
6	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
7	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
8	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
9	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
10	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
11	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
12	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
13	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
14	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
15	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
16	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
17	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
18	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
19	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
20	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
21	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
22	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
23	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
24	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
25	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
26	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
27	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
28	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
29	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
30	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
31	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
32	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
33	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
34	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
35	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
36	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
37	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
38	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
39	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
40	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
41	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
42	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
43	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
44	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
45	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
46	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
47	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
48	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
49	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
50	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2

If added new columns, in addition to already prepared (up to 36 non-digital games or 39 games to digital), should extend the formulas (average, median, frequency of responses and percentage) for the new columns.

The total number of typed questionnaires should be typed in the NUM cell. This information is mandatory, as it serves as the basis for the formulas.

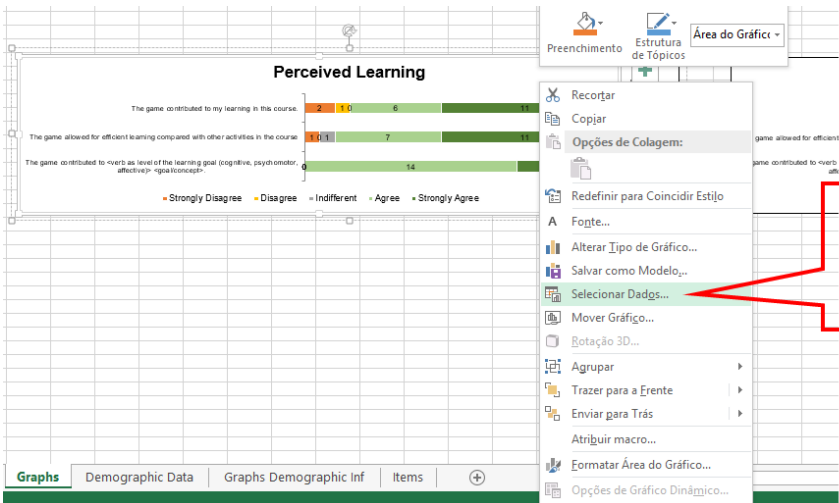
Students' resp'	16	2	0	1	1	1	2	2	2	2	2	2	2	2	2	2
	17	1	1	1	2	1	1	1	1	0	1	1	1	1	1	1
	18	-1	1	1	1	2	2	2	2	2	1	2	2	2	2	2
	19	-1	1	1	1	0	1	1	0	0	0	1	1	1	1	1
	20	1	1	0	1	0	-1	0	-1	-1	0	0	0	0	0	0
	21															
	22															
	23															
	24															
	25															
	26															
	27															
	28															
	29															
	30															
	31															
	32															
	33															
	34															
	35															
	36															
	37															
	38															
	39															
	40															
	Average	1,54	0,90	0,93	1,43	0,80	1,10	1,35	0,25	0,20	1,35	1,35	1,1			
	Median	2	1	1	1	1	1	2	0	0	2	2	2			
	NUM	20														
	Indicate into the cell above (NUM) the total number of completed questionnaires															
	Frequency of responses	2	13	4	4	10	7	6	11	3	4	11	11			
		1	3	11	11	9	7	11	5	7	4	5	5			

When you finish filling out the spreadsheet should be indicated in the cell indicated the total number of responses, in this example were 20.

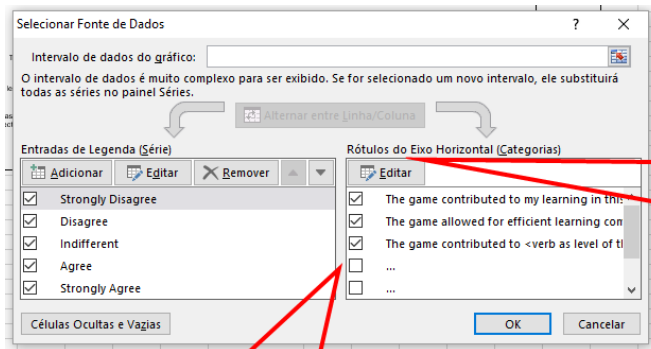
In the spreadsheet "Graphics" the graphics are automatically updated based on the data entered.

However, if you have inserted items related to learning goals in addition to the already prepared columns (36 for non-digital games or 39 games to digital). You have to edit the data set of Perceived Learning chart and select new items.

See the step by step.



The screenshot shows a spreadsheet with a chart titled "Perceived Learning". The chart displays three horizontal bars representing different learning goals. The first bar is for "The game contributed to my learning in this course" with values 2, 1, 0, 6, 7, 8. The second bar is for "The game allowed for efficient learning compared with other activities in the course" with values 1, 1, 7, 14. The third bar is for "The game contributed to <verb as level of the learning goal (cognitive, psychomotor, affective) -> <goal concept>" with a value of 14. A legend below the chart shows five categories: Strongly Disagree, Disagree, Indifferent, Agree, and Strongly Agree. A context menu is open over the chart, with "Selecionar Dados..." highlighted. A red callout box points to this option with the text: "Select the chart and click the right button. Choose the 'Select Data' option."



The screenshot shows the "Selecionar Fonte de Dados" dialog box. It has two main sections: "Entradas de Legenda (Série)" and "Rótulos do Eixo Horizontal (Categorias)". The "Entradas de Legenda" section has a list of five items with checked boxes: Strongly Disagree, Disagree, Indifferent, Agree, and Strongly Agree. The "Rótulos do Eixo Horizontal" section has a list of three items with checked boxes: "The game contributed to my learning in this...", "The game allowed for efficient learning con...", and "The game contributed to <verb as level of ti...". There are "Adicionar", "Editar", and "Remover" buttons for the legend, and an "Editar" button for the categories. A red callout box points to the "Editar" button in the categories section with the text: "Click Edit if you need to add new items (select new data set)".

If the items are already in the prepared cells (36 or 39) just select the check box for the item appears on the chart.

6					
7		Fun	25	I had fun with	
8			26	Something h	
9		Focused Attention	27	There was s	
0			28	I was so inv	
1			29	I forgot abou	
2			30	The game co	
3		Relevance	31	It is clear to	
4			32	This game is	
5			33	I prefer learning with this game to learning through other ways (e.g. other teaching methods).	
6		Short-term learning	34	The game contributed to my learning in this course.	
7	Perceived Learning		35	The game allowed for efficient learning compared with other activities in the course	
8		Learning goals	36	The game contributed to <verb as level of the learning goal (cognitive, psychomotor, affective)> <goal/concept>.	
9			37	...	
0			38	...	
1			39	...	

Rótulos do Eixo ? X

Intervalo do rótulo do eixo:

#Items[SES35;SES40] = The game contr...

OK Cancelar

If you have exceeded the prepared cells (36 or 39). Select the new data set. E Click OK.

Data | Graphs | Demographic Data | Graphs Demographic Inf | Items

Step 3. Insert the responses to the questionnaire regarding the Demographic Information.

Select the "Infos Demographic" spreadsheet.

Data | Graphs | **Demographic Data** | Graphs Demographic Inf | Items

Again, each line corresponds to a questionnaire answered by a student. Must be respected typing as standard set for each item.

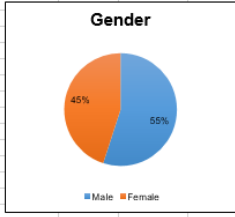
DEMOGRAPHIC INFORMATION						
	Age group:	Gender:	How often do you play digital games?		How often do you play non-digital games (card or board games, etc.)?	
			1 - Never	2 - Rarely: from time to time	1 - Never	2 - Rarely: from time to time
	1 - Under 18 years	M - Male	3 - Monthly: at least once a month	3 - Monthly: at least once a month	3 - Monthly: at least once a month	3 - Monthly: at least once a month
	2 - 18 to 28 years	F - Female	4 - Weekly: at least once a week	4 - Weekly: at least once a week	4 - Weekly: at least once a week	4 - Weekly: at least once a week
	3 - 29 to 39 years		5 - Daily: every day.	5 - Daily: every day.	5 - Daily: every day.	5 - Daily: every day.
	4 - 40 to 50 years					
	5 - Over 50 years					
1	2	M	1	1	3	3
2	2	M	1	1	3	3
3	1	M	1	1	3	3
4	1	M	3	3	3	3
5	2	F	3	3	3	3
6	2	F	3	3	3	3
7	1	F	3	3	2	2
8	1	M	2	2	2	2
9	3	M	5	5	2	2
10	4	F	5	5	4	4
11	4	F	4	4	4	4
12	5	F	4	4	4	4
13	5	M	4	4	4	4
14	1	M	2	2	4	4
15	1	F	3	3	5	5
16	3	M	3	3	5	5
17	3	F	4	4	5	5
18	2	M	4	4	5	5
19	2	M	4	4	5	5
20	2	F	4	4	1	1
21						
22						
23						
24						
25						
26						
27						

Each line corresponds to a student. The responses of each questionnaire are typed in a line. See the examples.

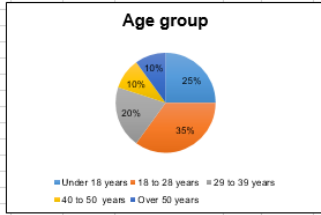
Data | Graphs | **Demographic Data** | Graphs Demographic Inf | Items

After typing, graphics on spreadsheet "Graphics Info demographic" will be updated automatically.

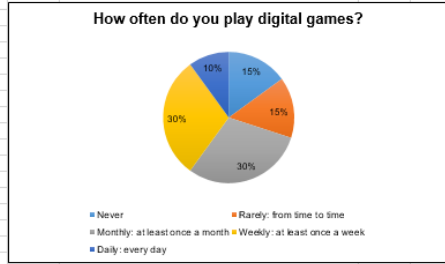
Gender	
Male	11
Female	9



Age group		
1	Under 18 years	5
2	18 to 28 years	7
3	29 to 39 years	4
4	40 to 50 years	2
5	Over 50 years	2



How often do you play digital games?		
1	Never	3
2	Rarely: from time to time	3
3	Monthly: at least once a month	6
4	Weekly: at least once a week	6
5	Daily: every day	2



How often do you play non-digital games (card or board)		
1	Never	1
2	Rarely: from time to time	3
3	Monthly: at least once a month	6
4	Weekly: at least once a week	5