Dashboard User Manual

1. Data Input and Problem Definition.

You will upload three different archives.

- **Observation Milestones:** One archive .txt containing the Observation Milestones. To generate by user.
- **Evaluation Milestones:** One archive .txt containing the Evaluation Milestones. To generate by user.
- **Student actions:** Number of archives .txt to determine by user. Every archive belongs to one student.

1.1 Problem/Class Definition.

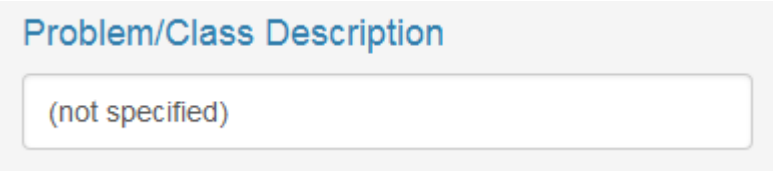


Image 4. Name of the problem input.

Here you can type the name chosen for the problem.

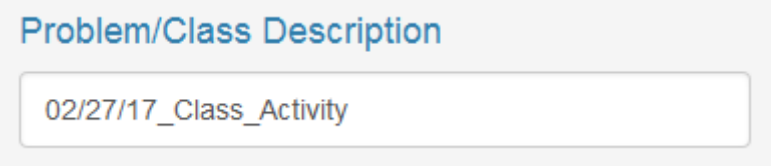


Image 5. Problem name.

1.2 Upload Archives.

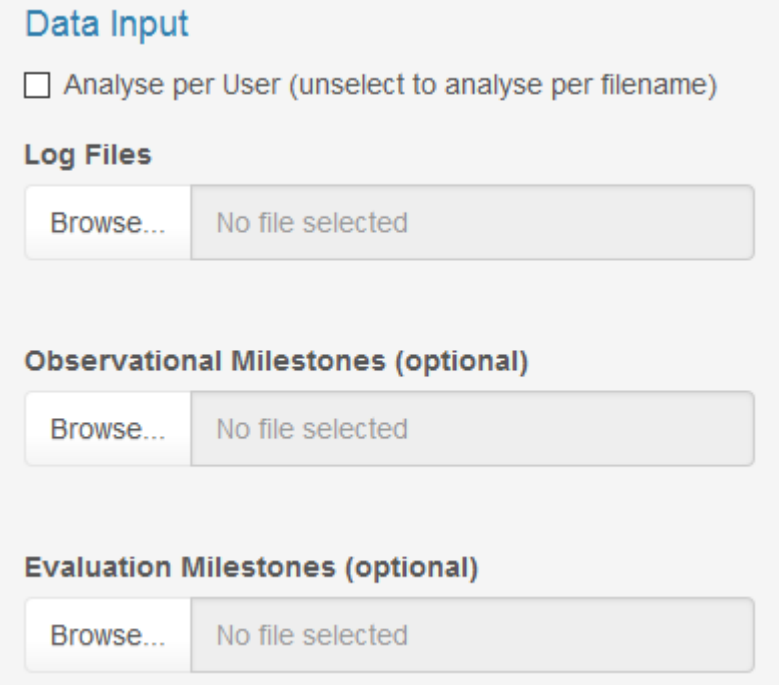


Image 6. Archives Input.

Here you upload the previously generated archives. By selecting the checkbox, you can make the analysis run by user. If not selected, the analysis by default will be by filename. (explicar que es user/filename)

- **Uploading Log Files**

Here you upload the student action files to analyze.

Image 7. Student Actions Files selected.

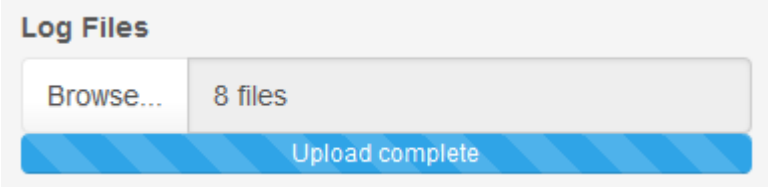


Image 8. Uploaded Student Actions Files.

- **Uploading Observation Milestones File**

Here you upload the Observation Milestones file previously created.

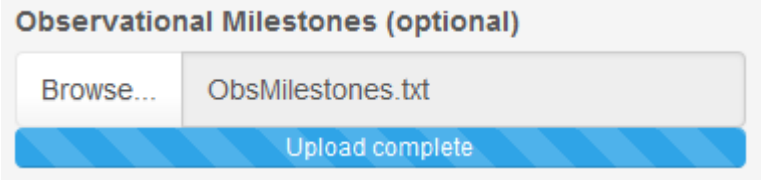


Image 9. Uploaded Observation Milestones File.

- **Uploading Evaluation Milestones File**

Here you upload the Evaluation Milestones file previously created.

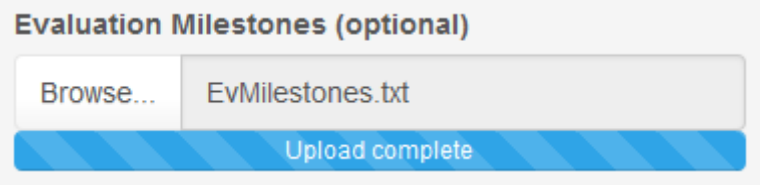


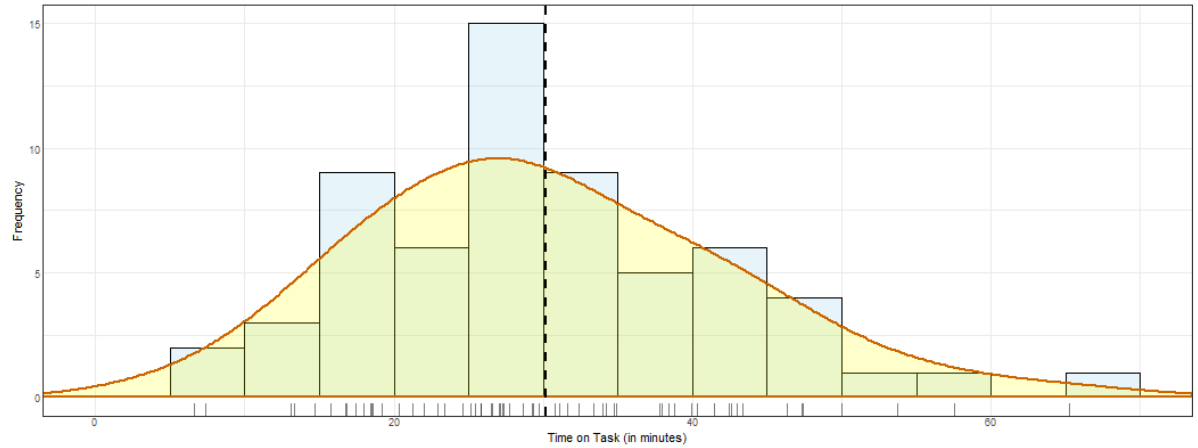
Image 10. Uploaded Evaluation Milestones File.

2. Global Results.

The Global Results panel gives you information about the actions of students without taking into account the milestones. This panel presents five different graphics.

2.1 Time-on-Task Distribution.

On this graph is presented the distribution of the time on task spent by student. A histogram and an estimate of the density curve are presented. Also, some information about the graph is shown, for example, the mean of the distribution, number of modes…

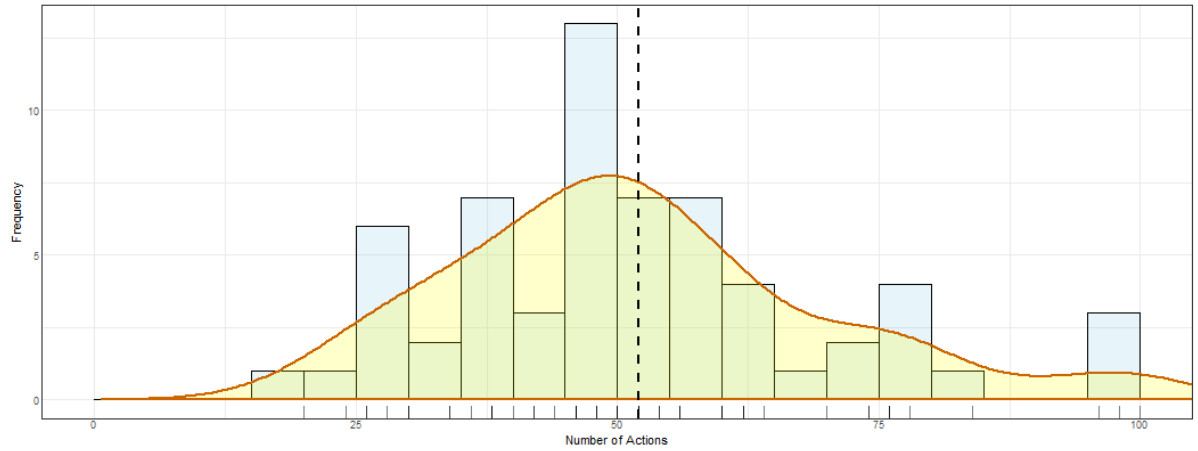


Distribution of the time on task spent by student. A histogram and an estimate of the density curve are presented.
The mean of this distribution is 30.13 minutes.
71 % of students have worked between 18 and 43 minutes.
There is no sign of more than one mode for time on task.

Image 11. Time-on-Task graph with information below.

2.2 Number-of-Actions Distribution.

On this graph is presented the distribution of the actions done by student. A histogram and an estimate of the density curve are presented. Also, some information about the graph is shown, for example, the mean of the distribution, number of modes…

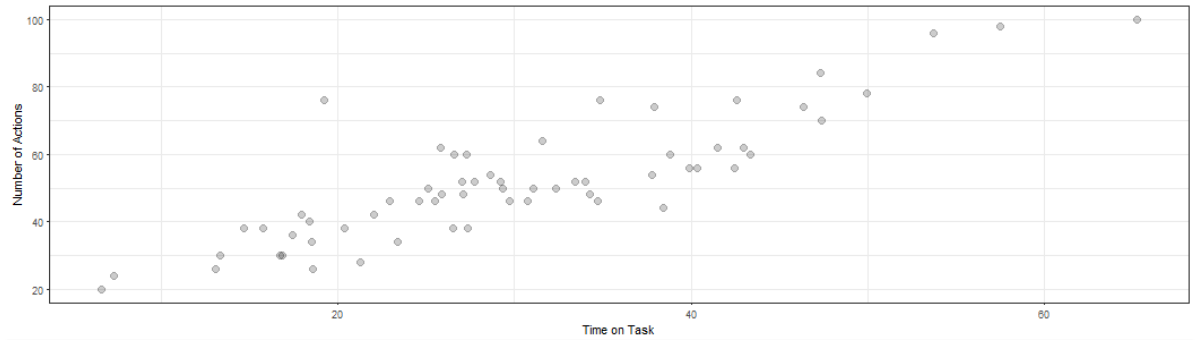


Distribution of the number of actions done by student. A histogram and an estimate of the density curve are presented.
The mean of this distribution is 52 actions.
71 % of students have done between 34 and 70 actions.
There is no sign of more than one mode for the number of actions.

Image 12. Number of Actions Distribution graph with information below.

2.3 Number-of-Actions vs Time-on-Task.

On this graph is presented the Time on Task (X axis) with the Number of Actions (Y axis). This graph is a scatter plot where you can place your mouse pointer on any point to see student information.



Place your mouse over a data point to identify the student.

Image 13. Number-of-Actions vs Time-on-Task with hover option.

2.4 Action time by student.

On this graph is presented the time in minutes every student has done every action. This graph is a scatter plot where you can place your mouse pointer on any point to see student information.

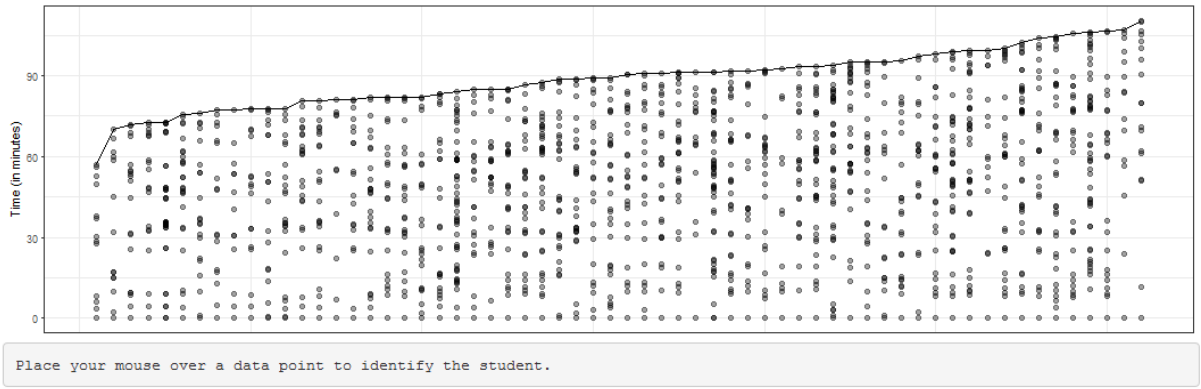


Image 14. Action time by student with hover option.

2.5 Functions Wordcloud.

This wordcloud expose the functions most commonly used by the students.

Image 15. Functions Wordcloud.

3. Observation Milestones.

The Observation Milestones panel analyzes if the student has done or not certain actions. This panel presents two different graphics.

3.1 Average per Milestone.

This graph presents the percentage of students that have accomplished an observation milestone. It is an indicator of the difficulty of the milestone.

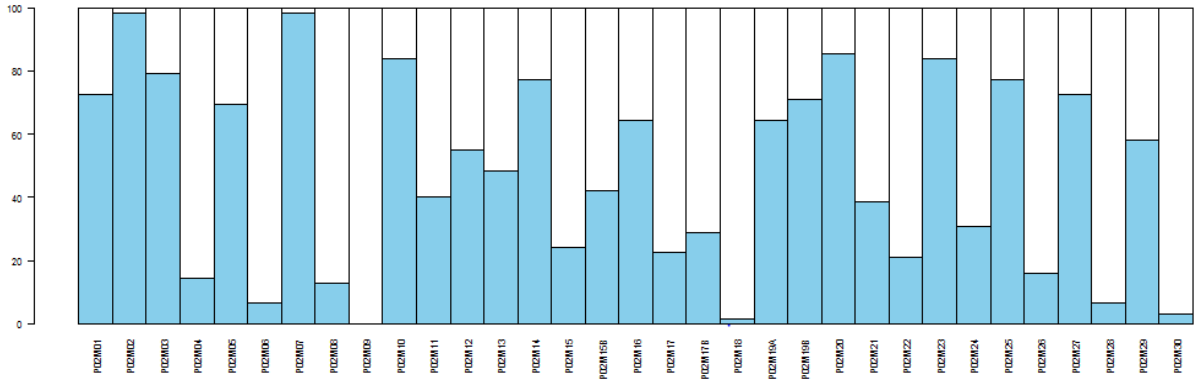


Image 16. Average per Milestone.

3.2 Heatmap.

This heatmap presents if the student has completed or not an observation milestone. Blue box means the student has accomplished the milestone and grey box means the student hasn't accomplished the milestone.

Image 17. Heatmap.

4. Evaluation Milestones.

The Evaluation Milestones panel analyzes if the student has passed or not certain milestones. This panel presents four different graphics.

4.1 Average per Milestone.

This graph presents the percentage of students that have accomplished an evaluation milestone. It is an indicator of the difficulty of the milestone.

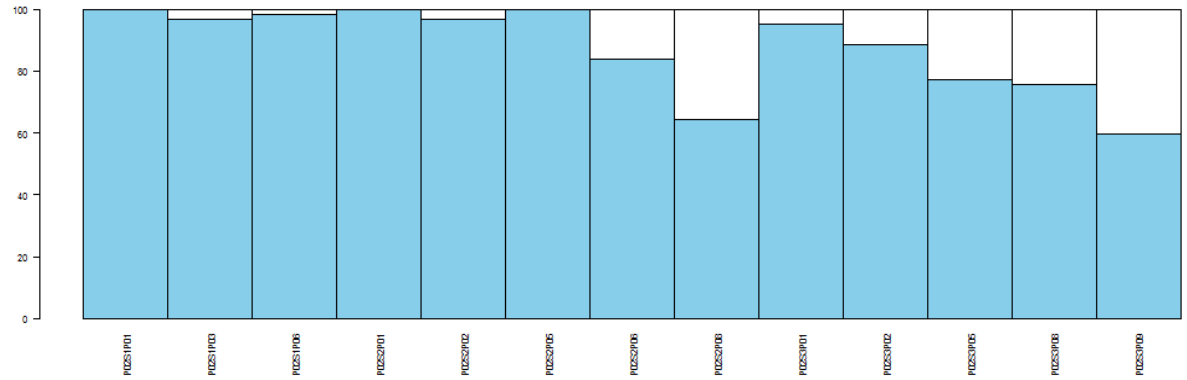


Image 18. Average per Milestone.

4.2 Heatmap.

This heatmap presents if the student has completed or not an evaluation milestone. Blue box means the student has accomplished the milestone and grey box means the student hasn't accomplished the milestone.

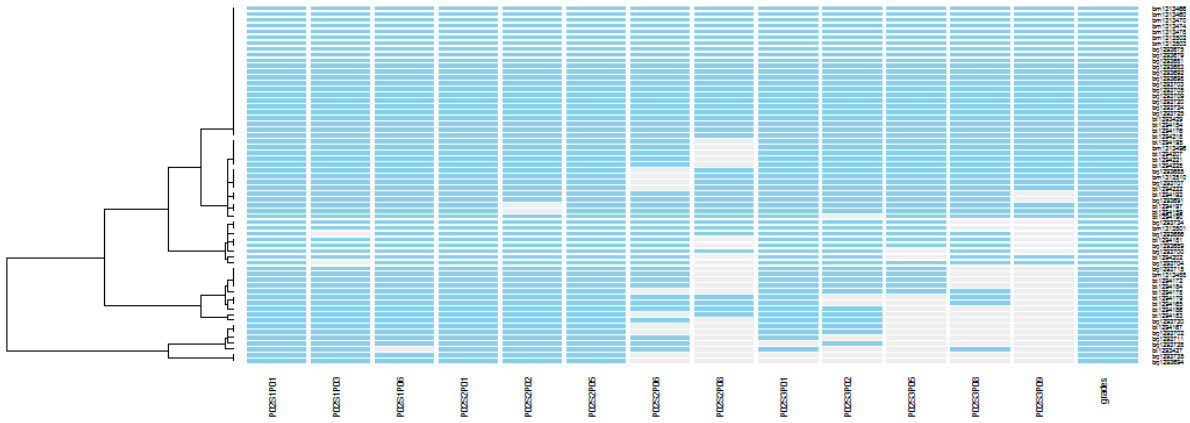


Image 19. Heatmap.

4.3 Grade Distribution.

On this graph is presented the distribution of the grades taken by students. The grades are presented with percentage.

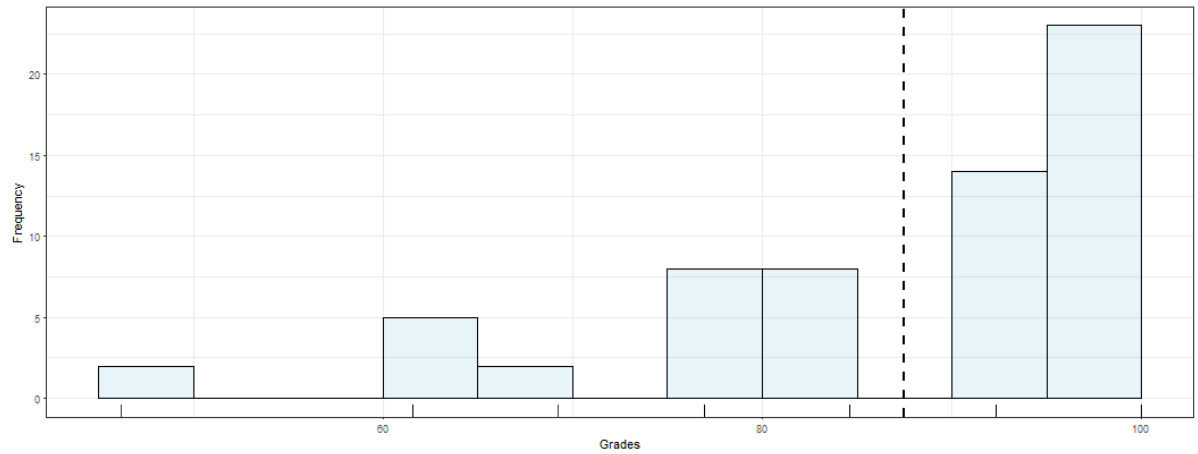


Image 20.Grade Distribution.

4.4 Actions-Grade-Time Scatterplot.

On this graph it is shown the Time on Task (X axis) with the Number of Actions (Y axis) and also, the grade taken by the student presented on a color scale. This graph is a scatter plot where you can place your mouse pointer on any point to see student information.

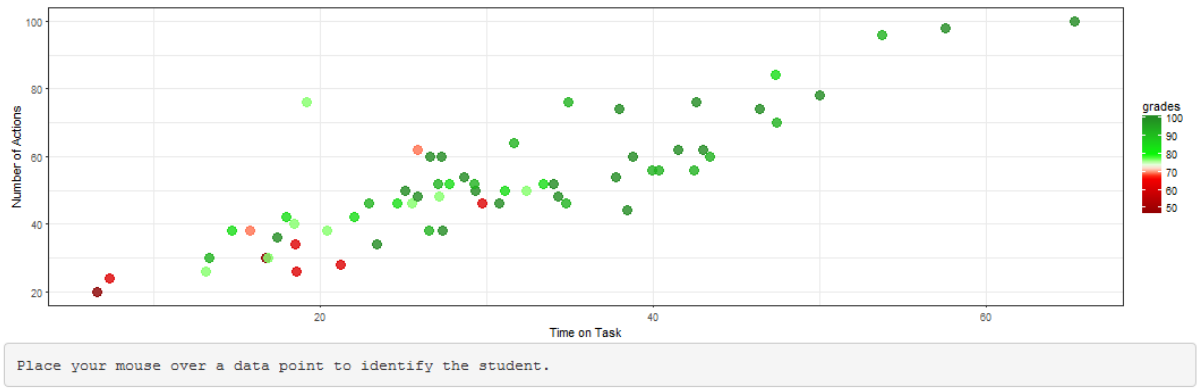


Image 21.Actions-Grade-Time Scatterplot with hover option.

5. Student Summary.

On this panel it is shown the student specific information. There is a select box where you can choose one student to see how he/she performed in the test. It is divided in two different parts.

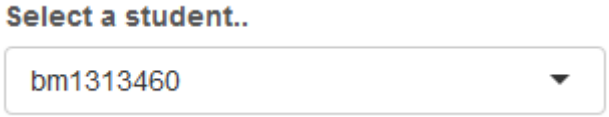


Image 22. Student Select Box.

5.1 Student Summary.

This panel shows some brief basic information about the performance of the chosen student. For example: the grade, time spent, number of actions...

Student grade: 100 %.
Time on task: 26.6 minutes.
Number of actions: 60 .

Image 23. Student Summary.

5.2 Work History.

This panel shows the written command the student has typed for every action with the time and time on task spent.

	Time	Time On Task	Command
1	20150417102415.539	0	pnorm(c(133.5), mean=120.4, sd=29.1, lower.tail=FALSE)
3	20150417103248.911	0	pbinom(c(0), size=9, prob=0.3262933, lower.tail=FALSE)
5	20150417103507.625	2.31	local({ .Table <- data.frame(Probability=dbinom(0:9, size=9, prob=0.3262933)) rownames(.Table) <- 0:9 print(.Table) })
7	20150417103556.811	3.13	1-2.859156e-02
9	20150417103817.131	5.47	9*0.3262933

Image 24. Student Work History.

Annexes.

1. Build the archives.

Generating the Milestones archives is an easy two steps process:

1. **Build an excel document.**
    - *Observation Milestones*

This document will have three different columns:

- milNames: Name of every milestone.
- regExps: A regular expression (which may capture some elements).
- logTests: An R expression which evaluates to a logical value (may be empty "").

	A	B	C	D
1	**milNames**	**regExps**	**logTests**	
2	P02M01	pnorm[(]c[(]	as.numeric(m[[1]])>100	
3	P02M02	pnorm[(]c[(]	as.numeric(m[[1]])>100	
4	P02M03	pbinom[(]c[(]0[)],%20size=9,%20prob		
5	P02M04	pbinom[(]c[(]0[)],%20size=9,%20prob		
6	P02M05	local[(]%7b%0a%20%20[.]Table%20%		
7	P02M06	pnorm[(]c[(]	as.numeric(m[[1]])>100	
8	P02M07	pnorm[(]c[(]	as.numeric(m[[1]])>100	

Image 1. Observation Milestones in Excel.

- *Evaluation Milestones*

This document will have two different columns:

- milNames: This first column will have the name of every milestone.
- evTests: This second column will contain the conditions for achieving the milestone. Which Observation Milestones need the student to complete for passing the Evaluation Milestone?

	A	B	C	D	
1	**milNames**	**evTests**			
2	P02S1P01	om['P02M01']|om['P02M02']			
3	P02S1P03	om['P02M03']|om['P02M04']|om['P02M05']			
4	P02S1P06	om['P02M06']|om['P02M07']			
5	P02S2P01	om['P02M08']|om['P02M09']|om['P02M10']|			
6	P02S2P02	om['P02M08']|om['P02M09']|om['P02M12']|			
7	P02S2P05	om['P02M14']|om['P02M15']|om['P02M15B']			
8	P02S2P06	om['P02M16']|om['P02M17']|om['P02M17B']			

Image 2. Evaluation Milestones in Excel.

2. Save as tab delimited text.

Once you have the excel file, you must save it as a tab delimited .txt archive:

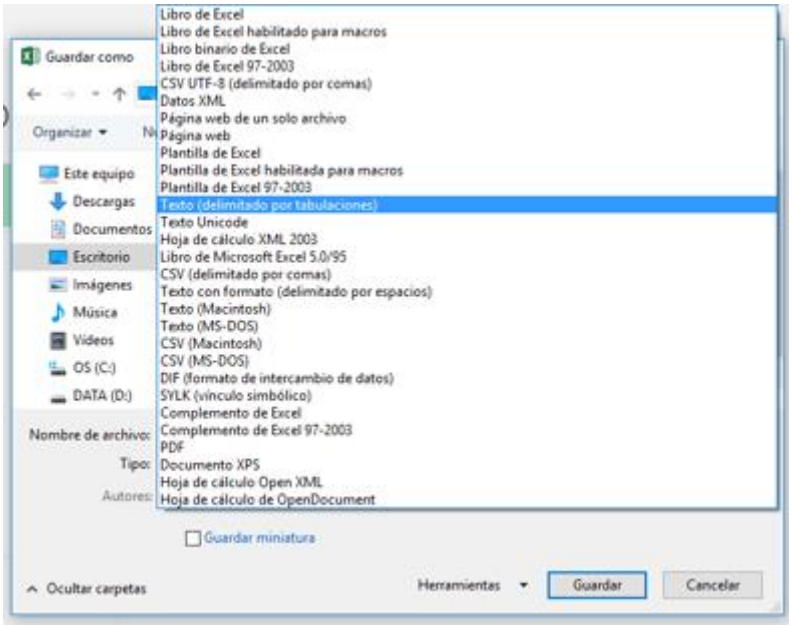


Image 3. Saving as tab delimited .txt.

After saving it as a .txt you will have the archive ready for upload.