

# **SYSTEM DYNAMICS PROJECTS PRESENTED BY POSTER: PRODUCT AND PROCESS SYNTHESIS**

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**SUMMARY:** *The purpose of this work is to share the experience using a Poster presentation of projects in System Dynamic (SD). The paper focus in how this didactic resource has been a helpful tool supporting the didactics of SD methodology (process) and at the same time a great resource to share with the students the entire project made by each of the class teams (product).*

**KEY-WORDS:** Poster, systems dynamics, Project Oriented Learning

## **1. ANTECEDENTS.**

Inspired by the poster sessions presented at the International Conference of the System Dynamics Society, at Palermo Italy in 2002, I told to my students that instead of present the typical final exhibition of projects in Power Point (PPT) they should design a poster showing the results of their projects. This would be different since the traditional exhibition in PPT assumed that the students present to the whole group the results of their project, nevertheless, in most of the cases only the professor attended actively this presentation because the students were nervous and reviewing notes of which they were going to expose. Therefore, designing a final presentation in poster would imply, at first, that the students applied their capacity of synthesis to show, in a limited space, the most important findings of its project. Also, it would demand a greater integration of the team since all the students of this team would have to be prepared to explain to the rest of the group under a scheme in which each student of the group had to attend through all posters and to make an evaluation of such in the format provided by the professor. This means that the members of each team would have to coordinate a rotation scheme so that one of them had to present his poster to his classmates while the other members attended the explanations of the rest of the teams.

A document with suggestions for the design of the poster was provided to the students, and were mentioned to them that the topics would be due to include, and with this information the team designed his to poster. The carried out activities by the professor in that context were to coordinate the logistics defining the suitable time of explanation for each given the number of posters displayed and the number of students.

It is important to mention that the course of System Dynamics is centered in the didactic technique of POL (Project Oriented Learning), reason why the project is carried out throughout all the semester. In it the students apply the methodology of system dynamics to construct a simulation model of a problematic situation that is worsening or damaging the system through time. An example of this one is the contamination by non biodegradable products in the ecosystem, such as disposable diapers and batteries, among others. This implies that students must learn the methodology at issue, but also to research about the project topic.

As a professor, I have find out that the most complicated part of the matter is to introduce them to the kind of problems that could be modeled by SD and to the process that would be followed to model them, that is where the Poster comes to satisfy the two dimensions: when exposing to my students posters of previous semesters I can at the same time introduce them to the methodology and the diverse problems that can be modeled by.

## **2. METHODOLOGY.**

As the students already have seen posters previously, it is easy than they can visualize the awaited product. At the presentation day the team places his posters in the walls of the classroom, separated such form that is

left space among them so that the students can listen clearly to the explanation without the interference of another team. The professor provides an evaluation form in order to each student co-evaluate the work of the others. This format appears in the section of annexed.

Maximum limit of time of exhibition of rounds is established; this time is calculated based on the number of posters to display, the number of students to have to attend to and the time available for the class. The professor must take a rigorous control of the time, and at the same time be evaluating the exhibition that each student is making. The session is closed giving thanks to the students by their effort and dedication, and mentioning that both the process of development of the project and the presentation of findings in a way that capture the audience are important.

### 3. RESULTS.

This resource also has opened other doors to present the work of the students in forums and conferences in and outside of our university. An example of this is the presentation of 13 poster projects in the XXXIV Conference of Investigation and Extension of the Tecnológico de Monterrey. Fig. 1 and 2 display the posters presented.



Fig. 1: Dynamic modeling of AIDS epidemic in the south of Africa



Fig. 2: Posters about diverse topics

This event was very enriching because, although the students who developed these posters no were longer in my classes during that semester, I could invite the students who were in my classes and I could design a class using the exhibition to show the students the process of modeling and the product reached from each one of the exposed projects. Fig. 3 and 4 show the students in this process.



Fig. 3: Students in the exhibition of posters



Fig. 4: Students filling the report asked for on the poster exhibition

#### **4. CONCLUSIONS.**

I do not have quantitative data that allows me to conclude in formal way on the reached results. I have found in the resource of poster a very useful element in didactics since it has allowed that the students develop and reinforce additional abilities besides SD such as synthesis capacity. Additional to this, in these two years using it I had accumulated an inventory of posters that each semester is increasing and that allows me, when I'm displaying them in my classes, introduce to my students at the beginning of each semester to the methodology of system dynamics and at the same time to display the type of projects that can be made. These also demand me being looking for forums in order share with the academic community the projects of my students and somehow, attract them to the investigation.

#### **5. REFERENCES.**

**A. Bourguet Diaz Rafael, Perez Salazar Gloria**, 2004, Designing a learning community for system dynamics. Memories of XXXIV Conference of Investigation and Extension of Tecnologico de Monterrey.

**B. Steven M. Block**, 1996, Do's and dont's of poster presentation. Department of Molecular Biology, Princeton University, Biophysical Journal, Vol. 71

**ANNEXES.**

Format to evaluate the final presentation of the project in poster modality.

**SYSTEM DYNAMICS**

**PROJECT EVALUATION FORMAT**

Name: \_\_\_\_\_

Group and

team: \_\_\_\_\_

Instructions: Full this format assigning a qualification from the 1 to the 5 to each one of the points (except Problematic To model) and writing a note that justifies the global qualification

	Team 1	Team 2	Team 3	Team 4 4
<b>Name of the problem to model</b>				
Model construction				
Results analysis				
Scenarios analysis				
The scenes are related to the propose hypothesis?				
Poster presentation				
Oral presentation of the project				
Global qualification				

