Il Giardino di Archimede
Un Museo per la Matematica

LEONARDO DA VINCI

Istruzione e cultura

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WP 5 – EXPERIMENTATION

MONITORING AND EVALUATING EXPERIMENTATION FORM

GUIDELINES

Introduction

The MONITORING AND EVALUATING EXPERIMENTATION FORM has been prepared in order to compare the different experiences of experimentation within the project.

Each teacher must complete one form for each laboratory performed.

Here are the guidelines for the compilation.

Compilation of MONITORING AND EVALUATING EXPERIMENTATION FORM

The monitoring form is composed of five parts.

- PART 0

  Introductory part with the specifications of the laboratory
- PART 1

  Part relating to the planning of laboratory activities in the classroom.

  To be completed before the activities in the classroom.
- PART 2

  Part devoted to the report of the activities.

  To be completed after the activities in the classroom.
- PART 3

  Part related to effects of the activities at a distance of time from the activities of the laboratory.

  To be completed away from the performance of the laboratory
- PART 4

  Section on assessment of the achievement of the objectives of the trial, both on direct beneficiaries (teachers) and indirect (pupils). To be completed at the end of the experimentation.

Here are the specific indications for filling the **MONITORING AND EVALUATING EXPERIMENTATION FORM**

PART 0

Laboratory	1	Numeri e conti presso gli antichi sumeri (Numbers and calculations with the ancient Sumerians)
	2	I geroglifici degli antichi egizi (The hieroglyphs of the ancient Egyptians)
	3	Regoli per il calcolo (Calculating sticks)
	4	Pitagora e il suo Teorema (Pythagoras and his theorem)

Mark by X the laboratory

Teacher

Indicate name and last name.

Specify if the teacher is an ordinary teacher of the class (how many hours per week, how long have taught in that class) or an external teacher that does not know that class.

School
Class
Age of participants
Number of participants

Complete with the required details.

Specify whether it is a group class or a group of pupils from different classes.

PART 1 - PROGRAM

This part is related with programming of laboratory activities.

To be completed before the activities in the classroom.

Planned activities
Please indicate which topics you plan to propose, how you plan to set the work, such as

materials and techniques (tools, slides, oral explanations, written activities ...), organization of working groups (division into groups or not), what sequence of activities, etc. ...

Time schedule

Specify the schedule for the planned activities: how many lessons, how long, how much to devote to each activity ...

PART 2 - Report

This part is devoted to report the activities in the classroom.

To be completed after the activities in the classroom.

date

Date of the activity

Activities carried out

Please indicate which activities were carried out and specify the mode: topics, materials and techniques (tools, slides, oral explanations, written), organization of working groups (division into groups or not, and what roles the different groups), and so on.

Comparison of planned activities and activities carried out

Time schedule

Specify the times that were used for each activity

Comparison of schedule and time spent

Remarks on the activities

Advantages and difficulties encountered by the teacher in conducting the laboratory

In this part there is the point of view of the teacher in his experience of conducting the laboratory. Identify the positive aspects encountered in conducting such activities and the negative aspects. Indicate whether the use of tools has made it difficult or has facilitated the lesson, what were the most difficult / easy aspects to communicate and manage ...

Advantages and difficulties that the teacher has observed in the students

In this part of the teacher records the reaction of the class involved in the laboratory. Please indicate what were the positive and negative aspects, advantages and difficulties encountered by students. Please pay attention in particular at the following aspects:

- Attention and participation

Describe what was the response of the class in terms of attention and participation in activities. The activities have attracted the interest of students?

The students were / were not involved in the activities? All or part? Did you notice the participation of students who are usually less involved and active or vice versa? What were the most engaging moments and what not (explanations, manual activities, use of tools, solving questions ,...)

- Understanding of the content

Describe what was the response of the class in terms of understanding the content and ability to perform the required tasks.

There have been difficulties in understanding mathematical contents?

- Ability to perform the tasks required

There have been difficulties in solving the questions? Specify which activities and which aspects.

There have been difficulties in using tools and materials? Specify which aspects.

- Collaboration / interaction within groups and between the working groups

Describe what was the response of the class in terms of collaboration in the proposed activities. There was cooperation within the group? Everybody took part in group work? With which roles?

Different groups have interacted with each other? In what way (collaborative, effectively competitive, overly competitive ...)

Teacher's reflections on the relationship of teaching and learning in the laboratory

In this section, on the basis of what has been recorded in the two previous sections (- Advantages and difficulties encountered by the teacher in conducting the laboratory and - Advantages and difficulties that the teacher has observed in the students), the teacher presents the his reflections on the relationship of teaching and learning in the laboratory experimentation and laboratory methods.

In particular, please describe what was successful points and effective learning aspects have been noticed in the experience compared with traditional lectures.

Please record difficulties and the strengths that have been raised.

Please give an overall assessment of the success of the experience and its results.

PART 3

Part relating to the impact of activities at a distance of time from the activities of the laboratory. . To be completed away from the performance of the laboratory.

This part of the card is intended to provide elements for an assessment of the impact of activities at a distance of time from the performance of laboratory activities. Although the time of the experimentation is quite small to provide a comprehensive assessment, we intend to collect evidence of a mark implications and effectiveness left by the activities in students in the short to medium term.

We encourage teachers to report any reference to activities that emerge in class after the performance of the activities planned for the laboratory.

Please record in particular references / significant memories that emerge spontaneously in the class.

On the other hand please encourage and stimulate with short questions ("Do you remember how ...?") answer related to the laboratory activities, just to have an idea of how much the students remember the experience. You can decide to do regularly such question (for example every 2 weeks, once a month).

Please record such references in the grid.

Observations on the educational effects noted after the course of the laboratory
Date *Please do this for each different reference (eg every 2 weeks, every month and occasionally when spontaneous)*
Insert references to laboratory activities, specifying: *- Activities to which it refers* *- In what context* *- By whom it was proposed the reference (teacher? Pupil? Pupil well prepared?)* *- If the reference is correct and relevant* *- If the the class or some student remember very well (or partially) the laboratory* *Give a brief assessment of the effectiveness of the experience carried out in relation to the present reference*

PART 4

Part on the collection of data for analysis and evaluation of the achievement of the objectives of the experimentation.

It is divided into two sections. In the first (A) the teacher describes and analyzes the experience carried out in terms of his professional enrichment. In the second (B) the teacher describes and analyzes the experience carried out in terms of enrichment of the students.

This part is to be completed at the conclusion of the experimentation

A. Comments on the new skills acquired by teachers in relation to experimentation

The teacher describes and analyzes the experience carried out in terms of his professional enrichment.

Please indicate whether and to what the experience has improved its training and provided new tools to their professional role. We welcome an assessment on the validity of experience as training and updating. Indicate whether and how it is estimated that the skills related to their professional role has been enhanced by the experience.

Indicate if the teacher expects to use in the future the new skills acquired in training and testing.

B. Observations on the processes and levels of achievement of pupils in relation to experimentation

The teacher describes and analyzes the experience in terms of enrichment for the students.

Please indicate whether and to what the experience was positive as regards the processes of learning.

Please expresses an evaluation of the effectiveness in learning and the level reached.

It indicates the level of skills attained and indicate if you notice any differences from a traditional lecture in the class globally or in individual pupils.