



16th EMS Annual Meeting & 11th European Conference on Applied Climatology (ECAC)
| 12–16 September 2016 | Trieste, Italy



Engaging Students and teachers in meteorology

The LaMMA proposal.

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Consiglio Nazionale delle Ricerche



Trieste, 15th September 2016

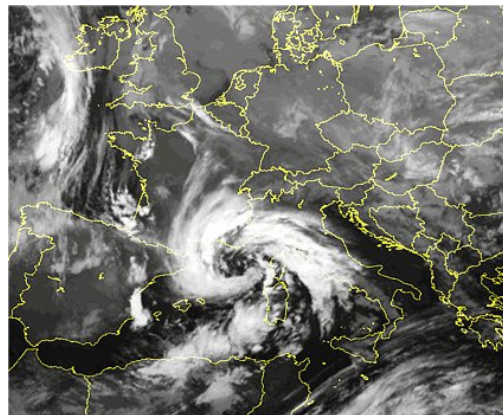
LaMMA weather service

Tuscany weather forecast service

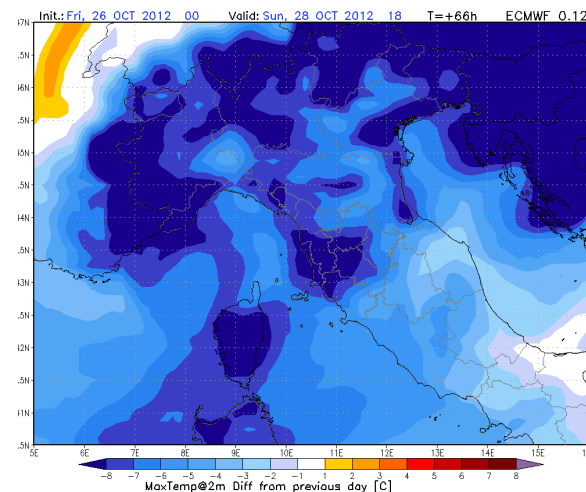
Weather forecast:
Web/TV/radio/APP



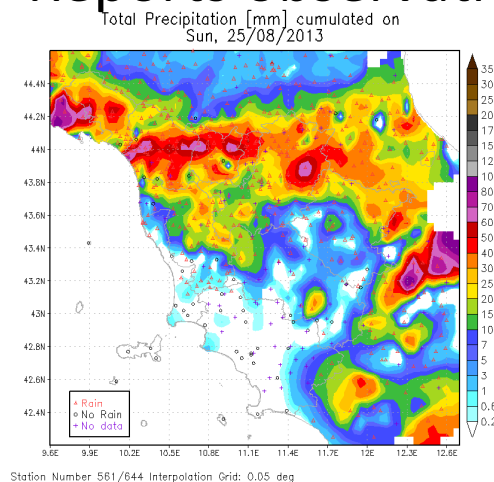
Satellite



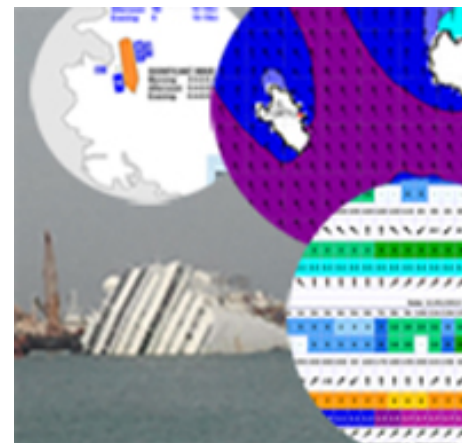
Numerical Models



Reports observation



Special weather services





CONSORZIO
LaMMA

education and outreach

- Lessons in school
- Course for teachers
- Science Festivals
- Open days
- Educational modules at LaMMA
(2/4 days per month)



In due giorni più di 250 persone in visita alla sala meteo, grazie della partecipazione!



Duration: 2h 30m



What's up there

Experimenting science

Primary
Middle



A basic weather lesson

Learning basics and Labs

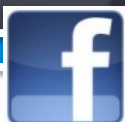
Primary
Middle
High



Who want to be a forecaster

Making weather forecast

Middle
High



the forecast making of



Around 1000 students

50 classes followed educational modules in
2015-2016

At LaMMA Labs		
Primary school	Middle school	High school
16	20	14
50 classes		

Educational modules
started in 2011-2012

In the last 5 years more
than **5000 students**
engaged.

Climate Change courses and development of Competence Units by participatory methodologies

Course target: school teachers (all education level) and environmental guides

Lenght: 20 hours (repeated for the 10 Tuscan counties, in 2 years: 2013-2014)

Aim: increase competences on environmental topics by new didactical methodologies

Role: scientific supervision; organization; lessons and materials, on-line form development

Scientific topics covered:

- Climate change and local impacts;
- Water resources and water footprint;
- Best practices and sustainable behaviours.



Teacher's training

750 Teachers participating in the 2 courses

844 Competence modules developed

1600 classes

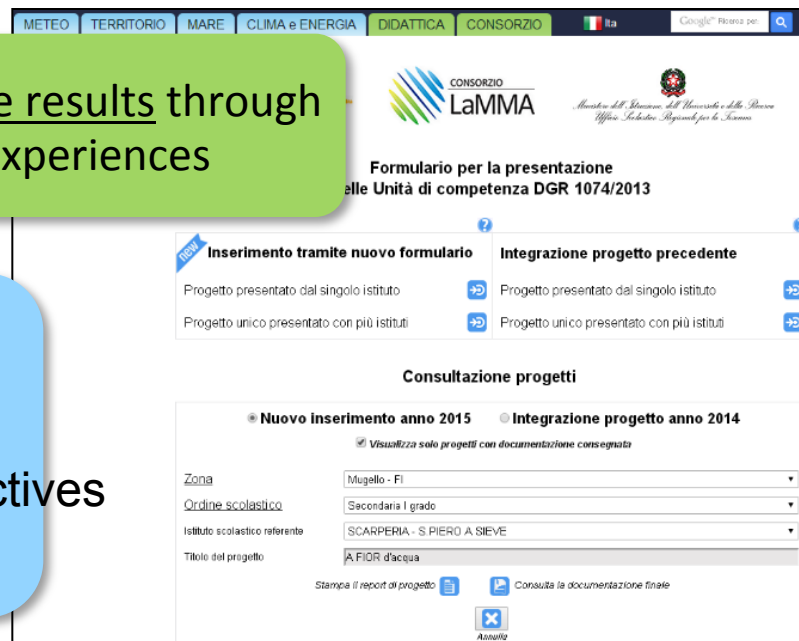
- Nursery school: 188
- Elementary: 757
- Secondary: 485
- High school: 184

Enhancement of teachers activities:

Aim: to enhance the work of teachers and to promote results through the discussion and the in-depth analysis of the experiences

Development of an **on-line platform** for an easy consultation of:

- modules designed
- documents on the activities realized and objectives achieved



The screenshot shows the LaMMA online platform interface. At the top, there is a navigation bar with tabs: METEO, TERRITORIO, MARE, CLIMA e ENERGIA, DIDATTICA, and CONSORZIO. Below the navigation bar, there is a header section with the LaMMA logo and the text "Consorzio LaMMA". The main content area is titled "Formulario per la presentazione alle Unità di competenza DGR 1074/2013". It contains two main sections: "Inserimento tramite nuovo formulario" and "Integrazione progetto precedente". Each section has two options: "Progetto presentato dal singolo istituto" and "Progetto unico presentato con più istituti". Below these sections, there is a "Consultazione progetti" section with two tabs: "Nuovo Inserimento anno 2015" and "Integrazione progetto anno 2014". The "Nuovo Inserimento anno 2015" tab is selected. It contains a form with the following fields: "Zona" (Mugello - FI), "Ordine scolastico" (Secondaria I grado), "Istituto scolastico referente" (SCARPERIA - S. PIERO A SIEVE), and "Titolo del progetto" (A FIOR D'ACQUA). At the bottom of the form, there are two buttons: "Stampa il report di progetto" and "Consulta la documentazione finale".

Closed-ended

- the lesson as a whole
- engagement
- new knowledge acquired
- interest increase
- clear and understandable
- facilities at LaMMA's

A SAMPLE of
300 students

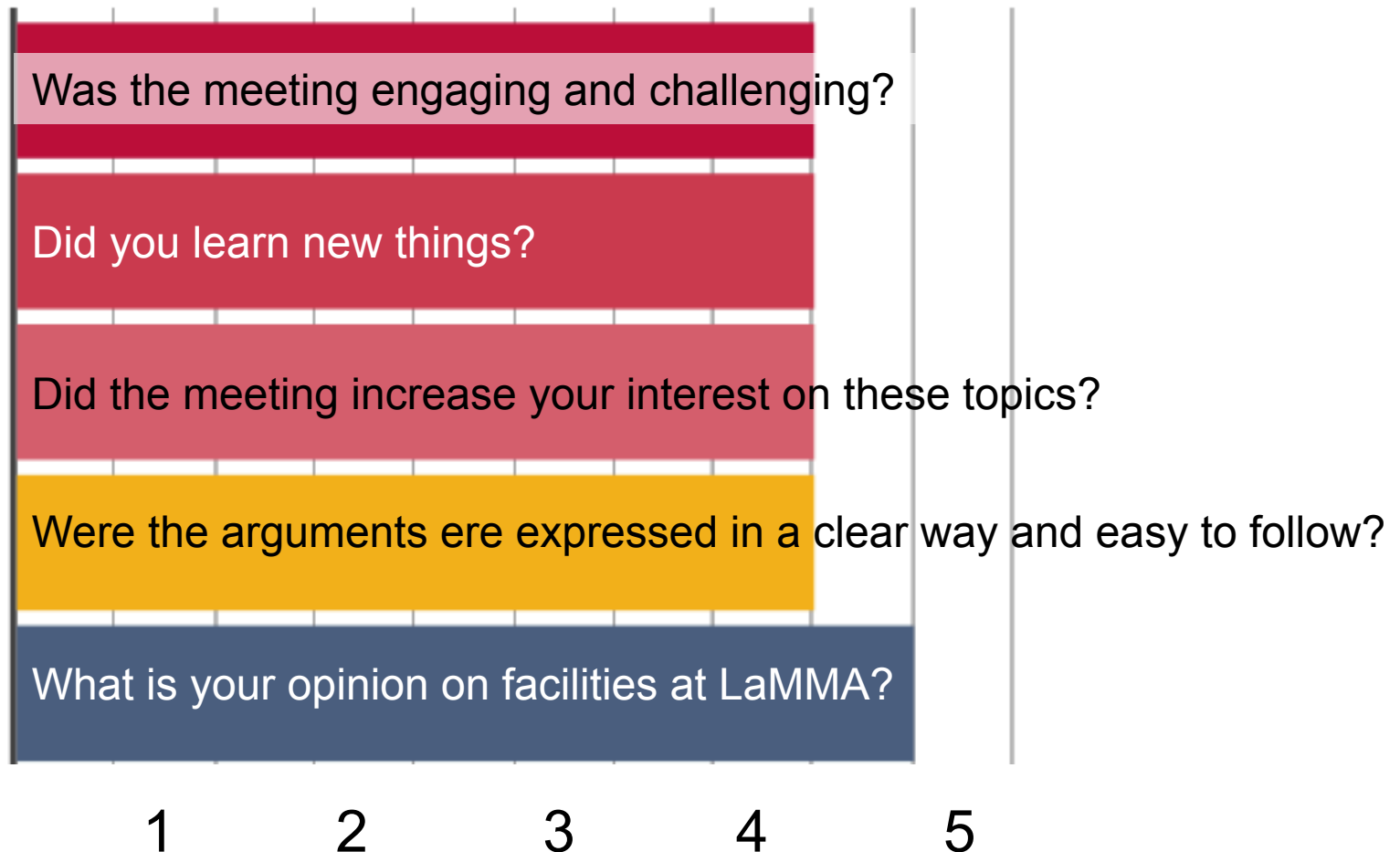


3 open ended question:

Like the most – thnigs to be improved - free comment



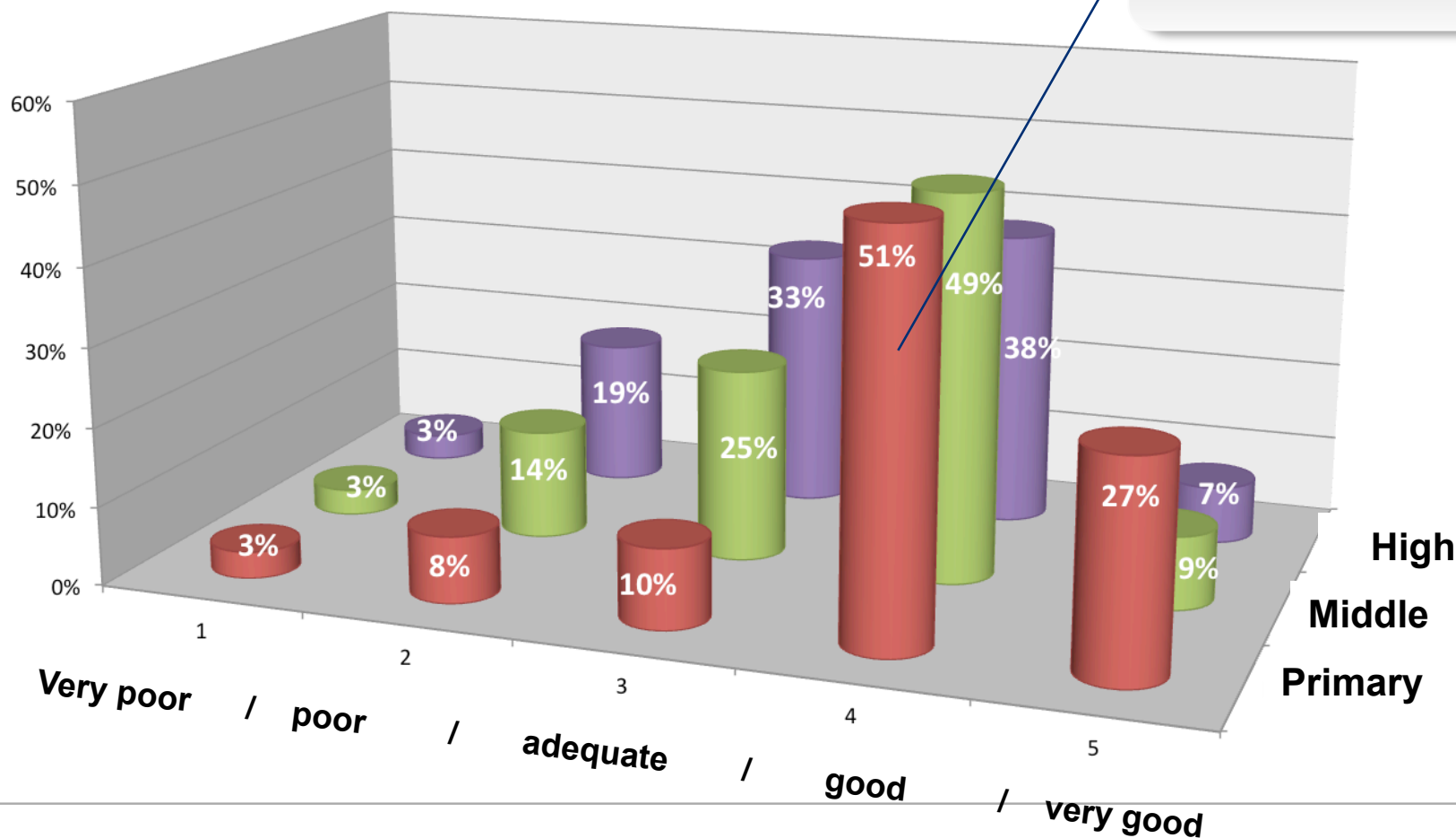
Closed-ended questions - LIKERT scale 1-5





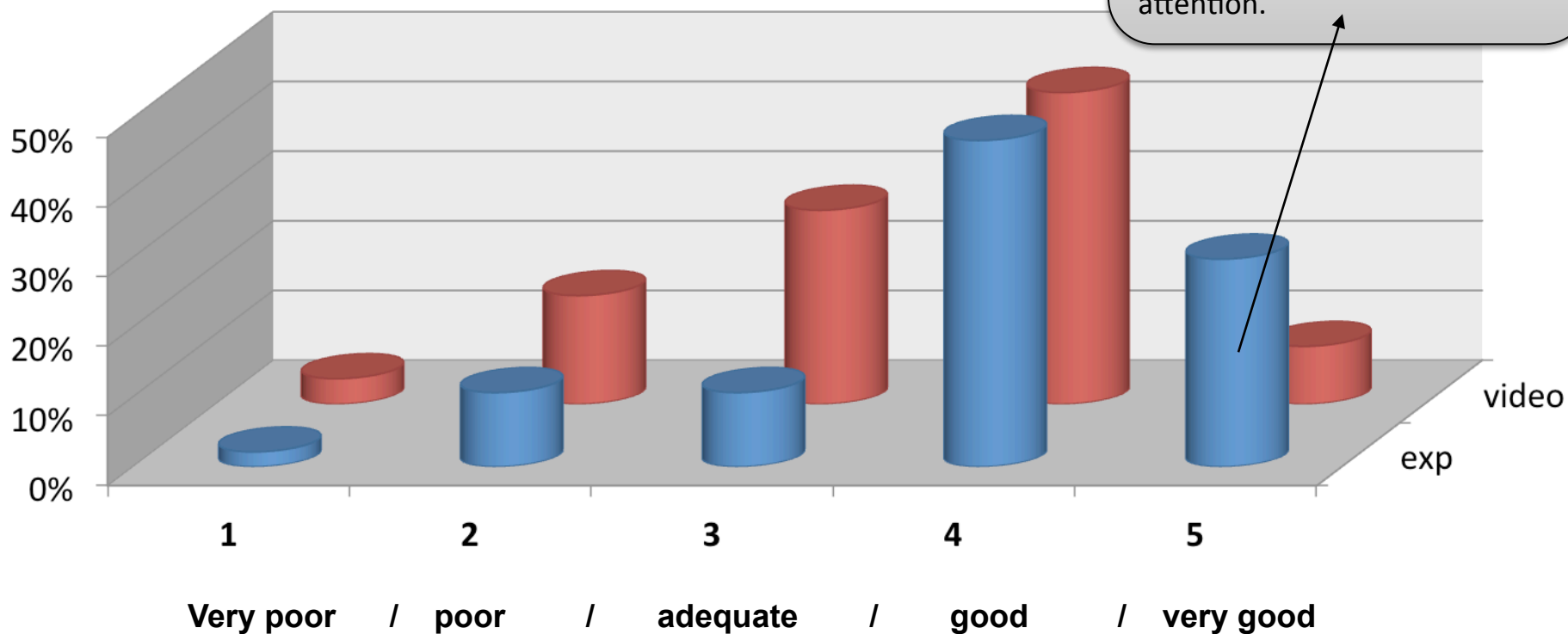
Growing interest by school level

Primary students are more curious and interested





Increase in interest by modules

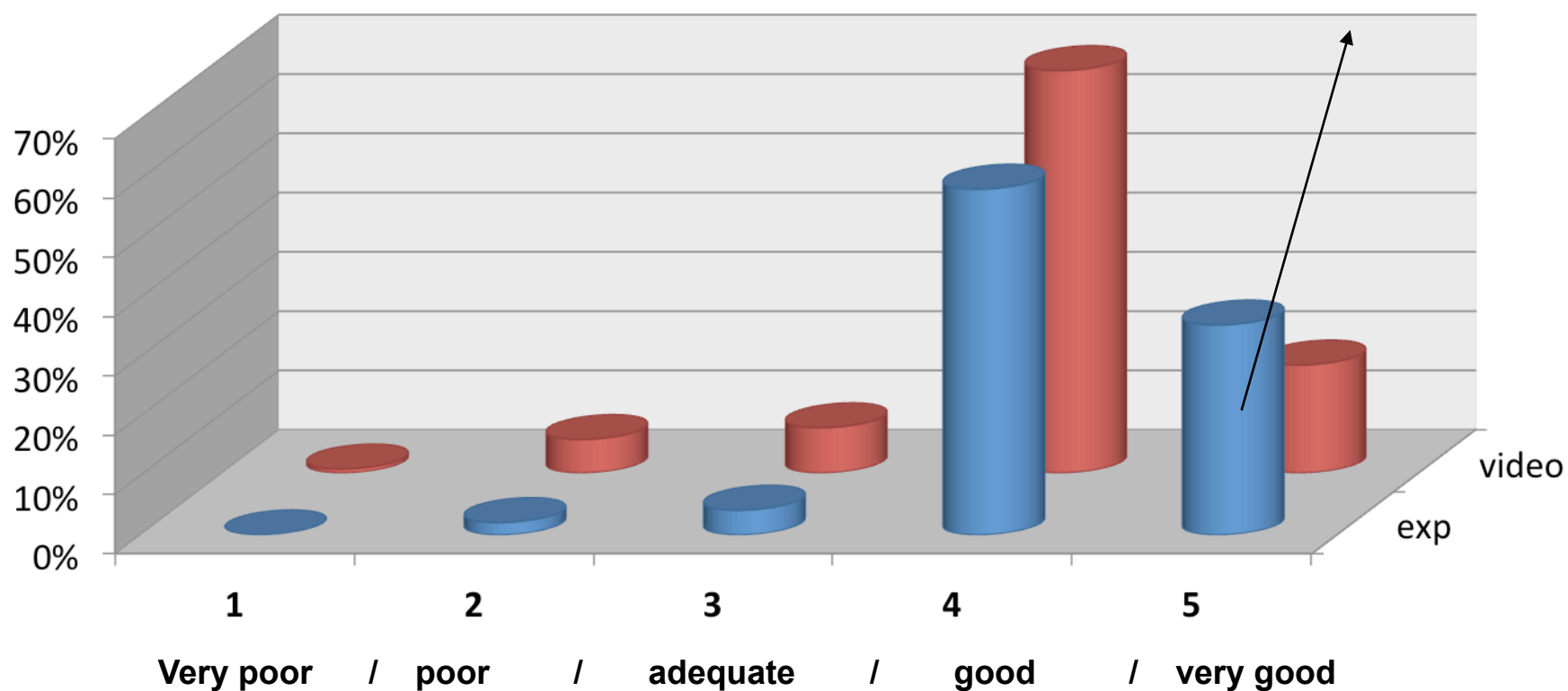




New knowledge acquired by modules

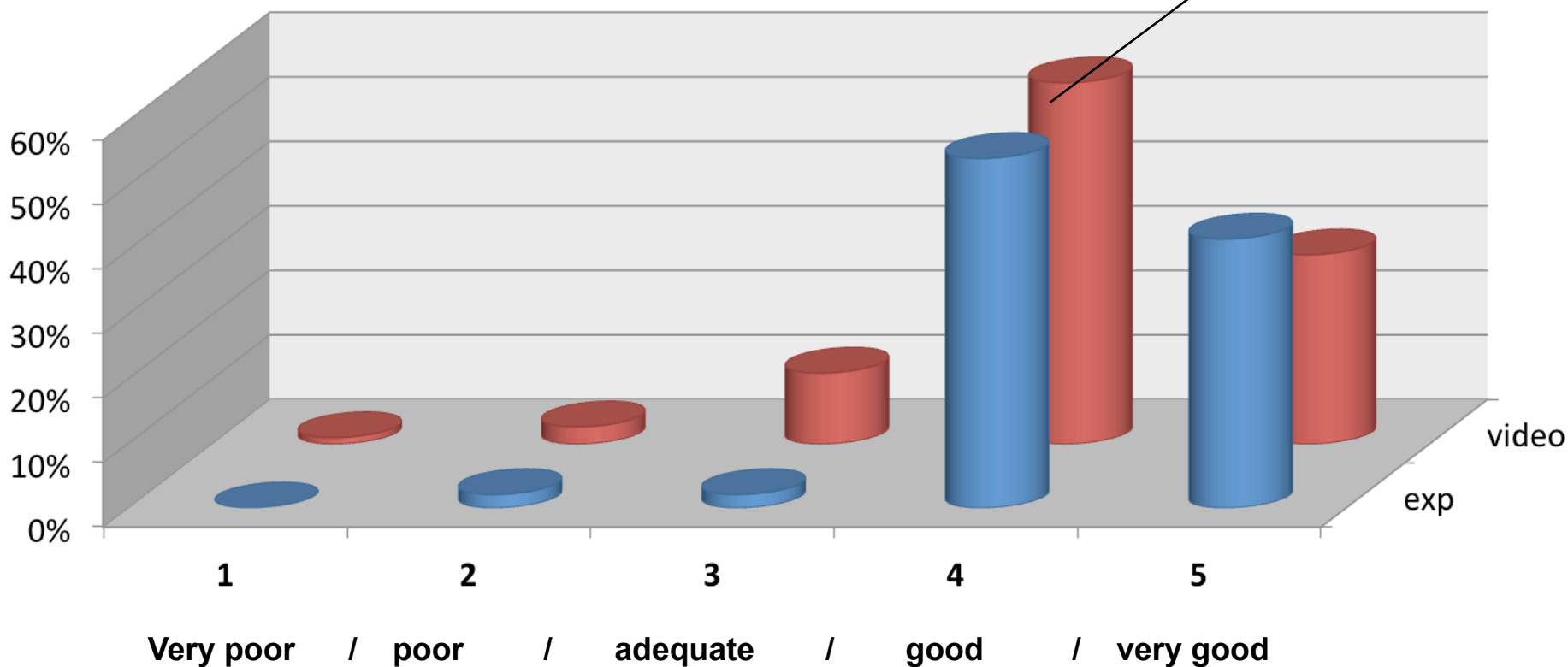
Experiments module is very positive in terms of learning **new things**.

Very positive also the **video** module.



Engagement by modules

Video module is very good for
engaging students. Positive rates
also for Experiments.





What did you like the most?





final remarks

- Improve participative modules
- Raise awareness on weather alert
- Funds to improve the educational offer

It was so great to visit LaMMA!



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