



Mid Term Evaluation SIEU

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Today

- Introduction
- Results students
- Results Teachers
- Results Companies
- Conclusions
- Tasks 2nd school year

Why mid term evaluation?

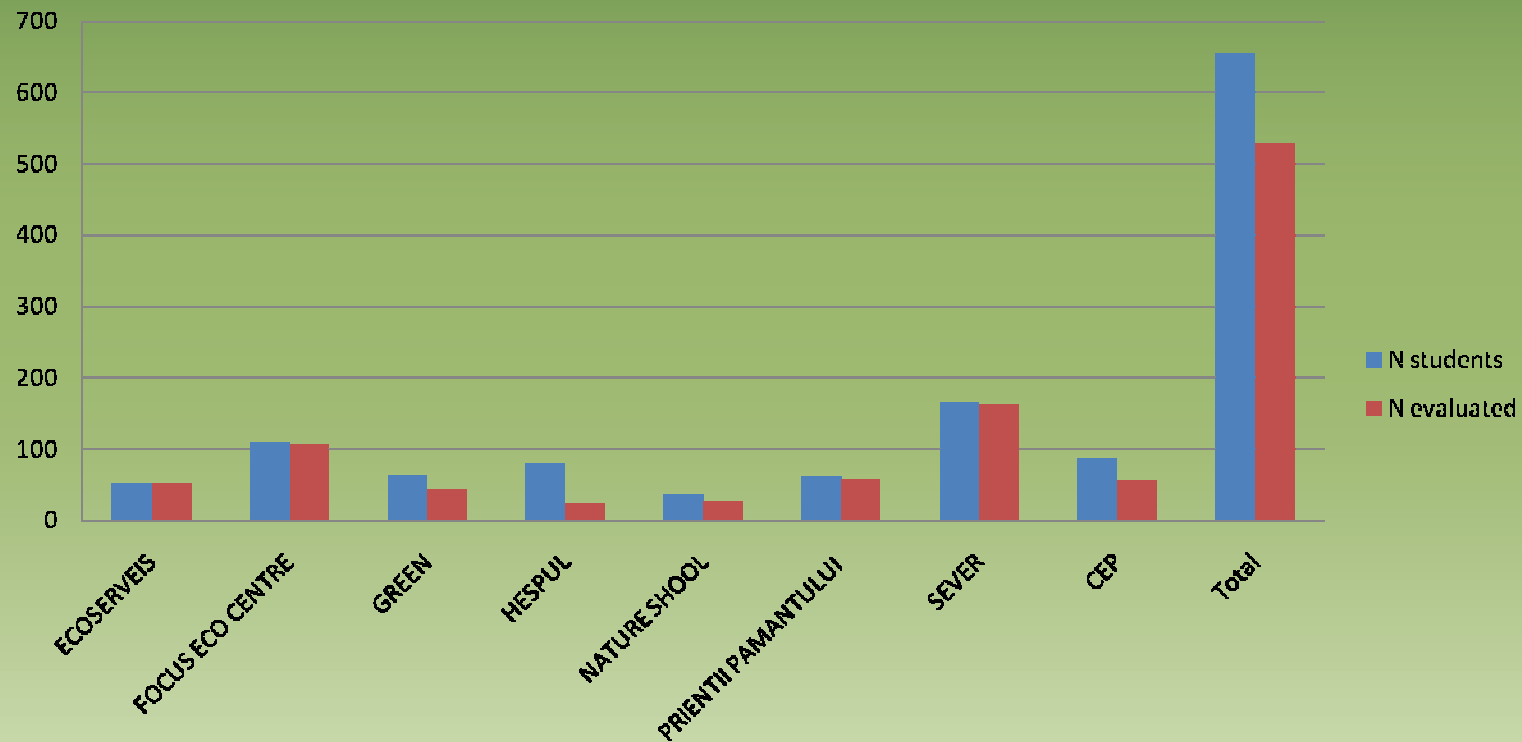
- Quality check: Process of Monitoring & Evaluation works well?
- First results: Does SIEU work well?
- Prepare 2nd year: Lessons learnt so far

Students

- BEFORE and AFTER SIEU → Impact evaluation
- AFTER SIEU → Product evaluation

Number of students

Number of participating and evaluated students



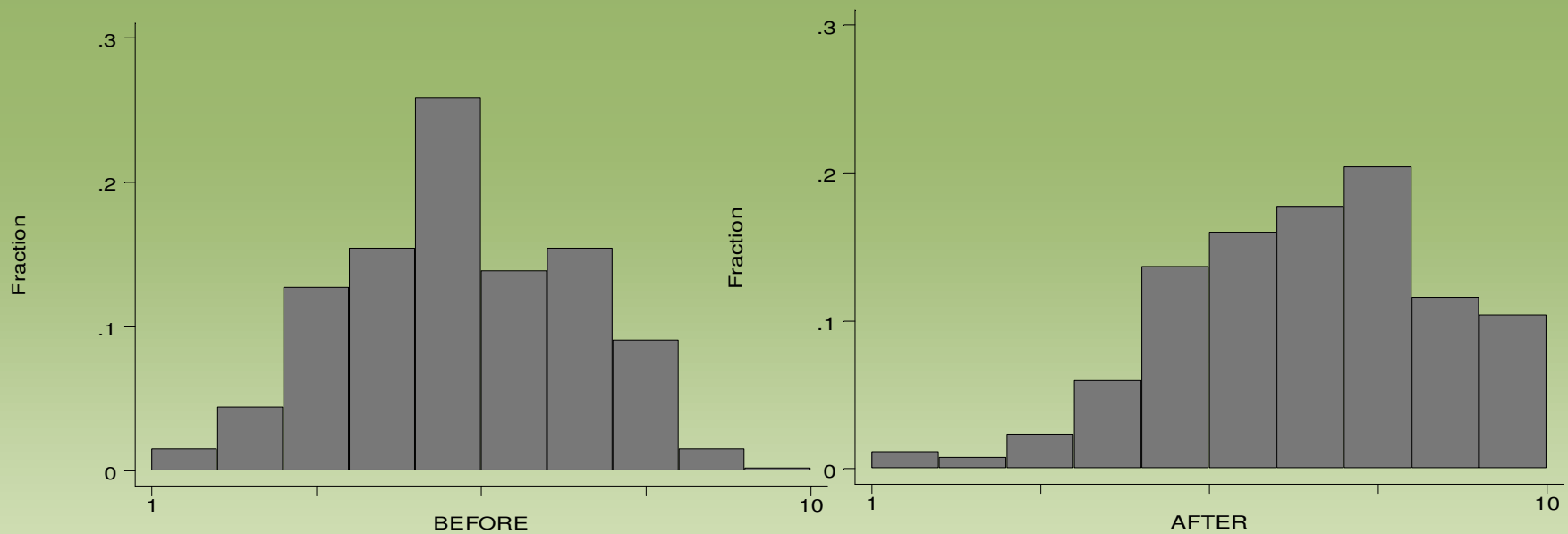
80% of participating students were well monitored: Very Good!

Impact evaluation: What did SIEU promise?

- Impact on students
 - 75 % of the students have improved knowledge of energy
 - 75 % of the students have improved awareness of the energy problem
 - 50 % of the students have improved their energy behaviour

Improved knowledge-1

- Q1: How much do you know about energy use energy saving and renewable energy?
(on a scale from 1 to 10)



Improved knowledge-2

- Q2: The production of water costs energy and creates waste. What is the best thing to do, take a bath or a shower?

	Before	After
1) Bath.	26 %	14 %
2) No difference.	9 %	8 %
3) A shower.	65 %	78 %

Improved knowledge-3

- Q3: What does a photovoltaic cell produce?

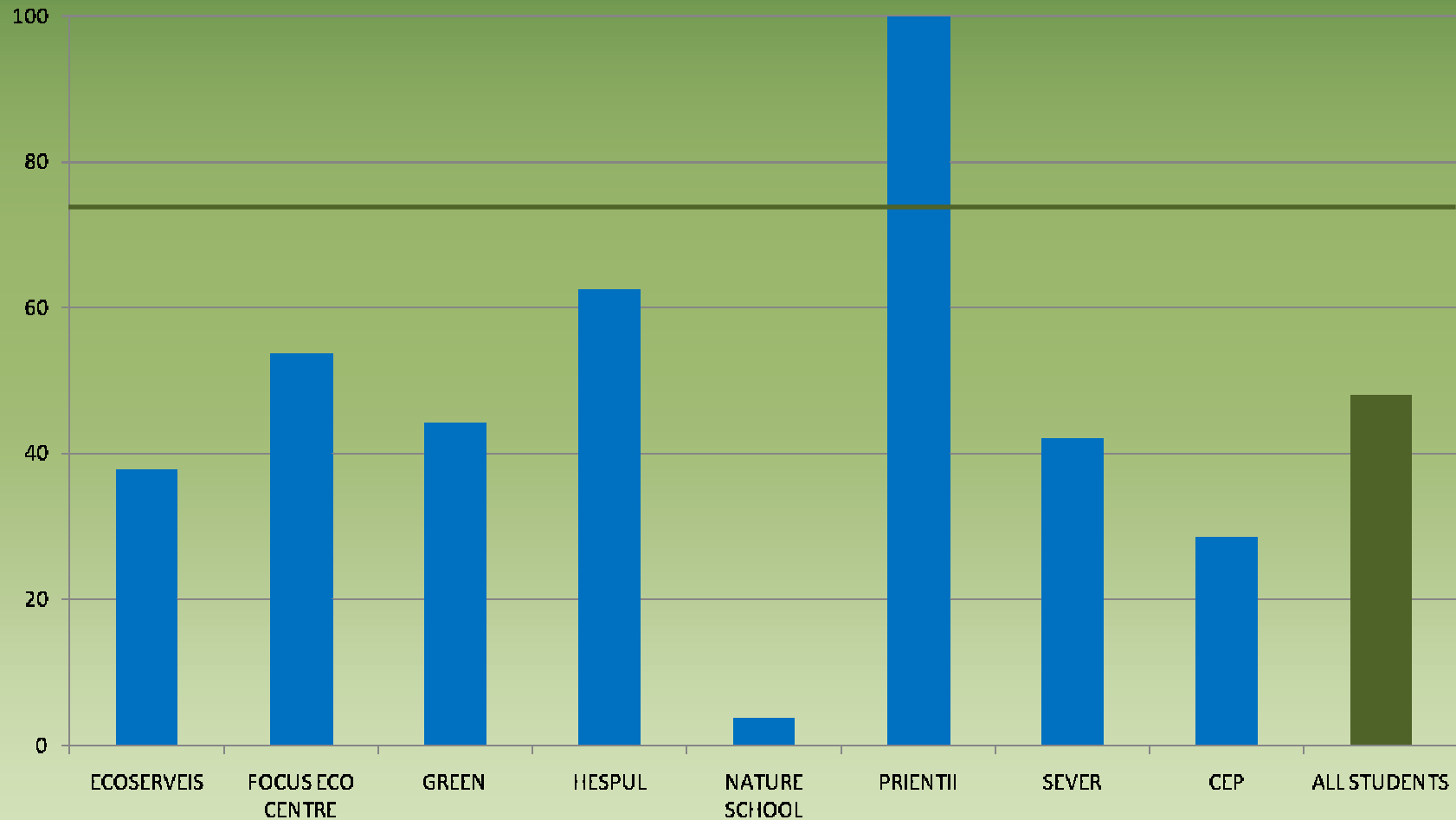
	Before	After
1) Warm water	10 %	4 %
2) Warm water and electricity	33 %	16 %
3) Electricity	57 %	80 %

Improved knowledge-4

- IF Q1-after higher than Q1-before AND answers Q2-after and Q3-after are correct, THEN: “Improved”
- IF Q1-after not higher than Q1-before AND answers Q2-before or Q3-before were incorrect AND answers Q2-after and Q3-after are correct, THEN: “Improved”

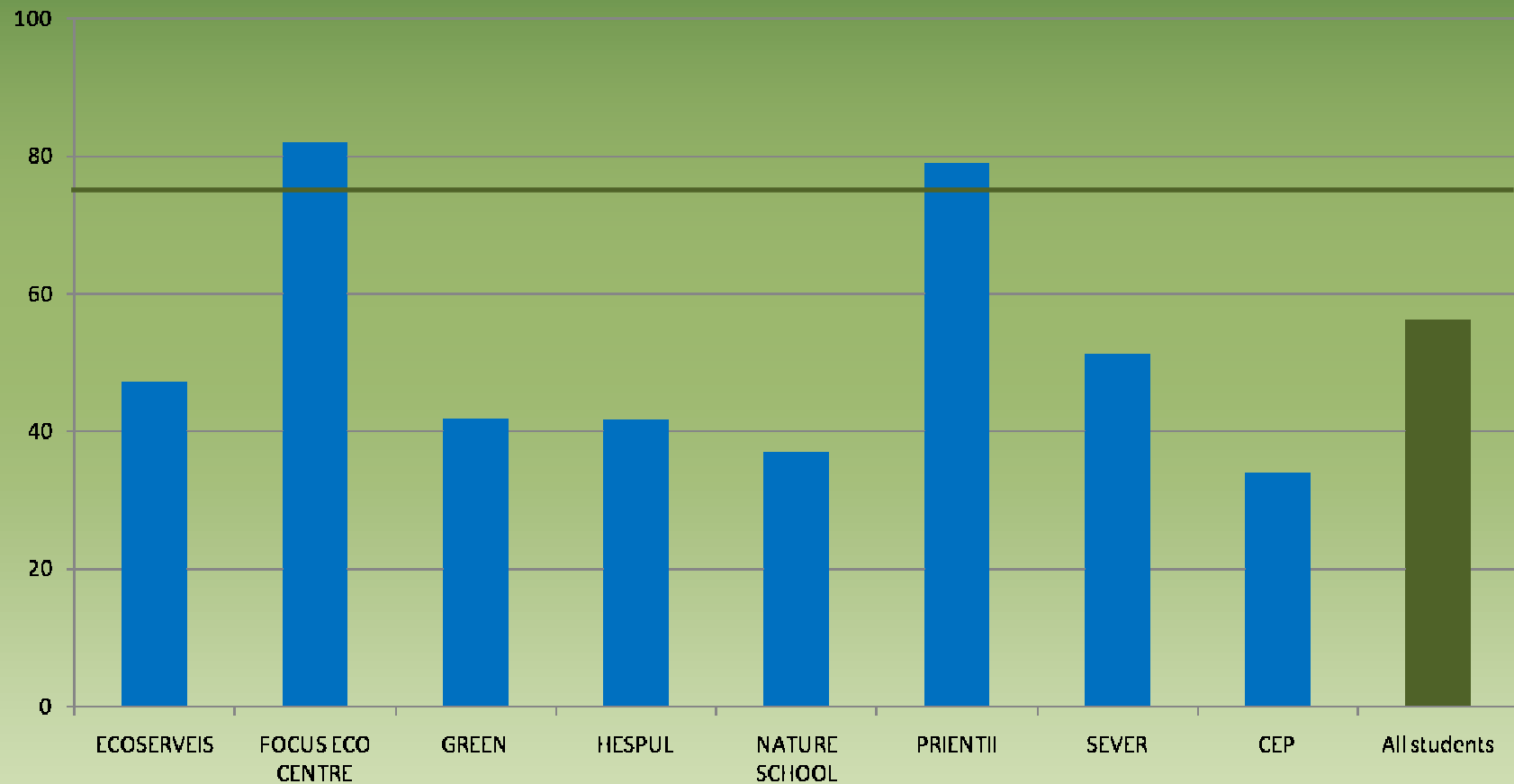
Improved knowledge-5

% of students with improved knowledge



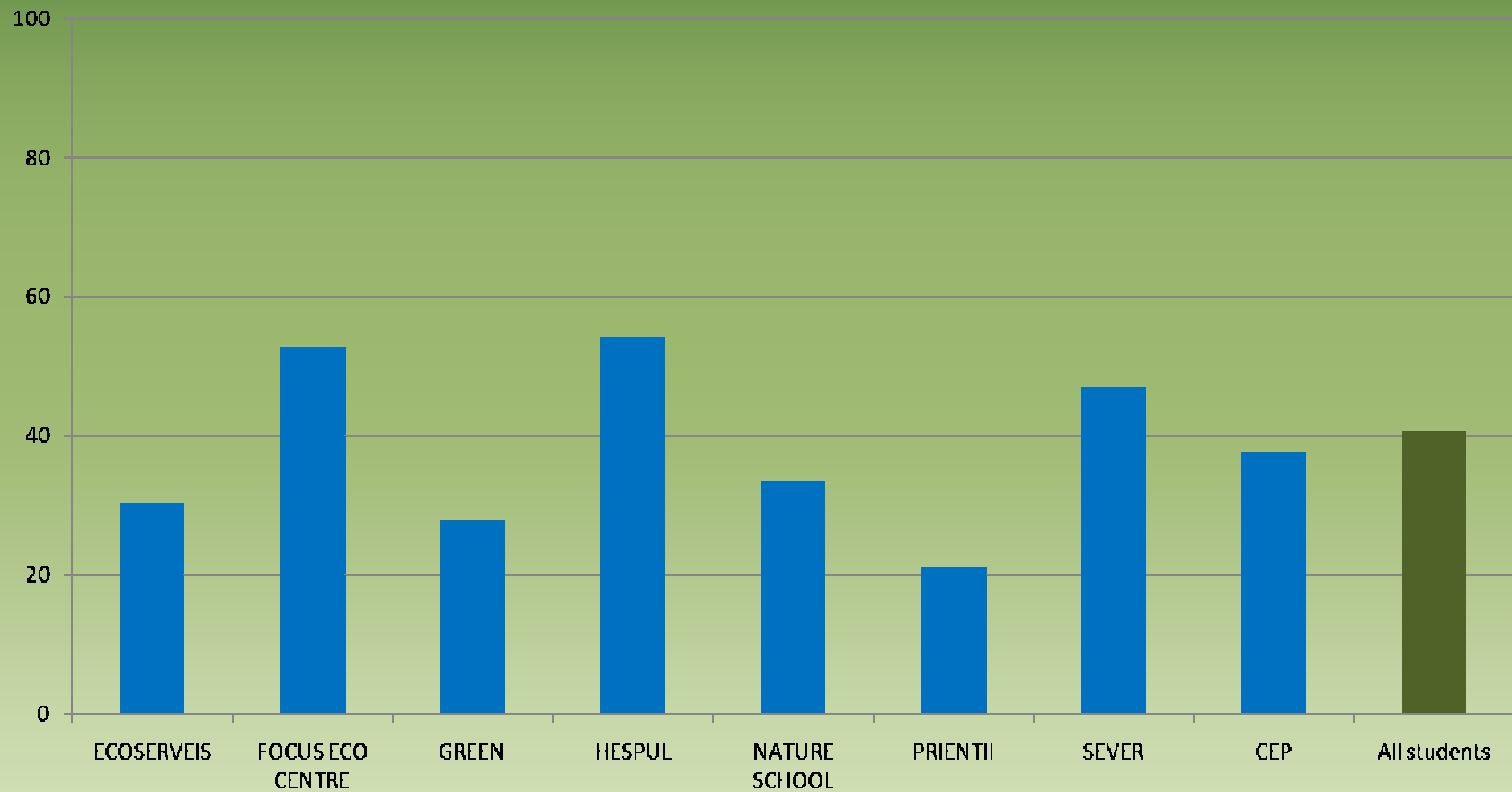
Improved awareness

% of students with improved awareness



Improved attitude

% of students with improved attitude

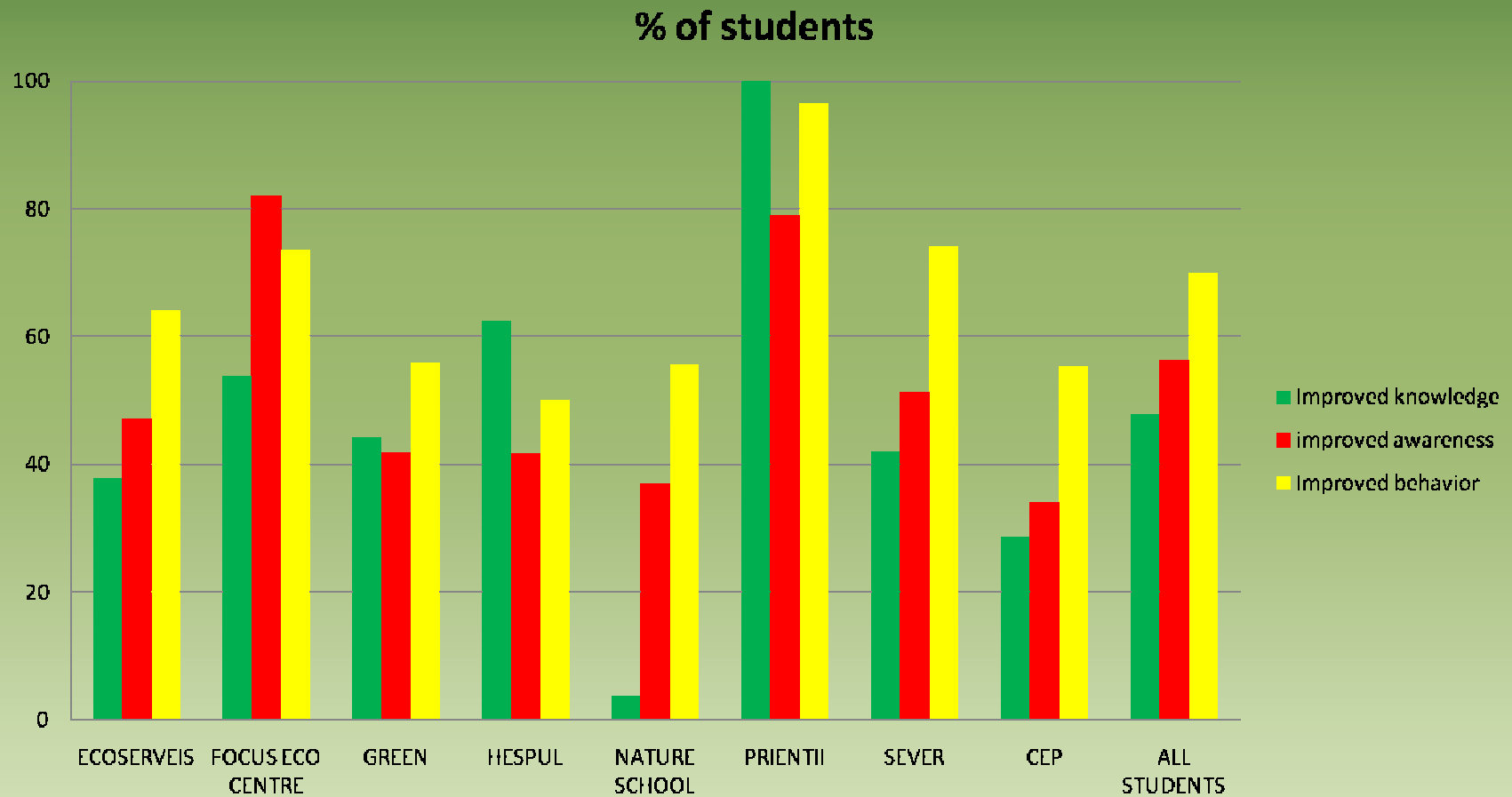


Improved behaviour

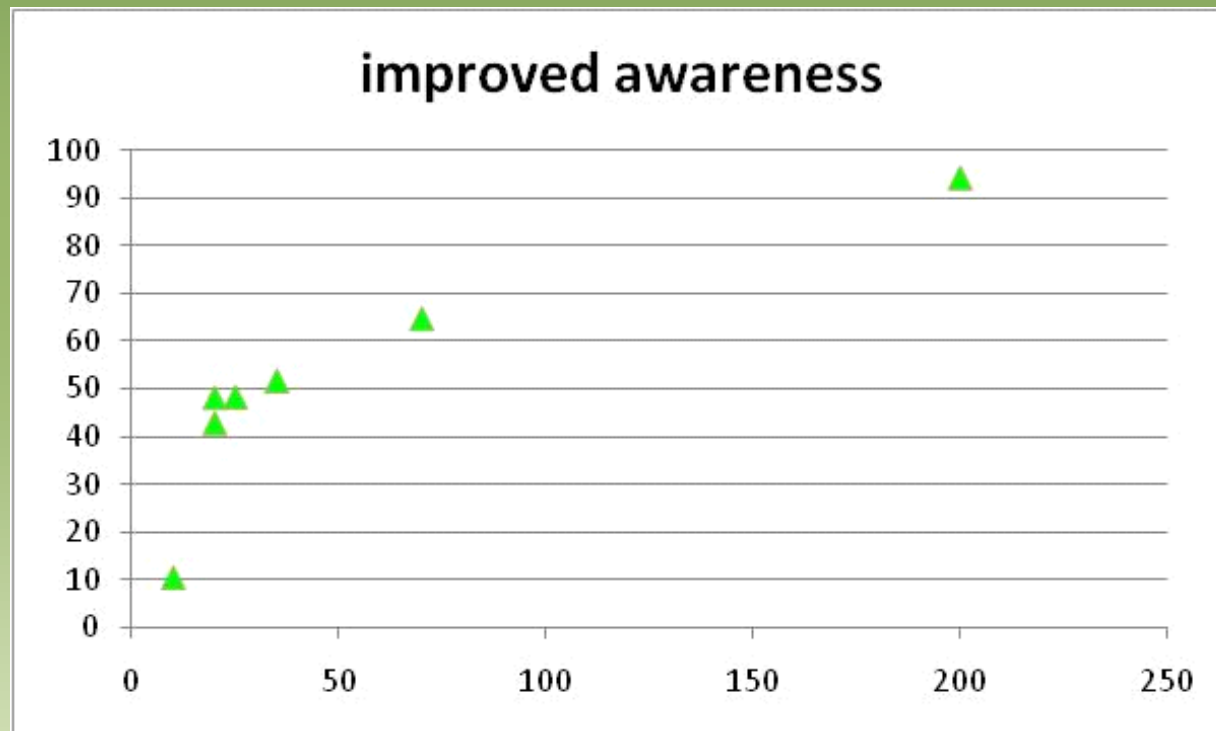
% of students with improved behaviour



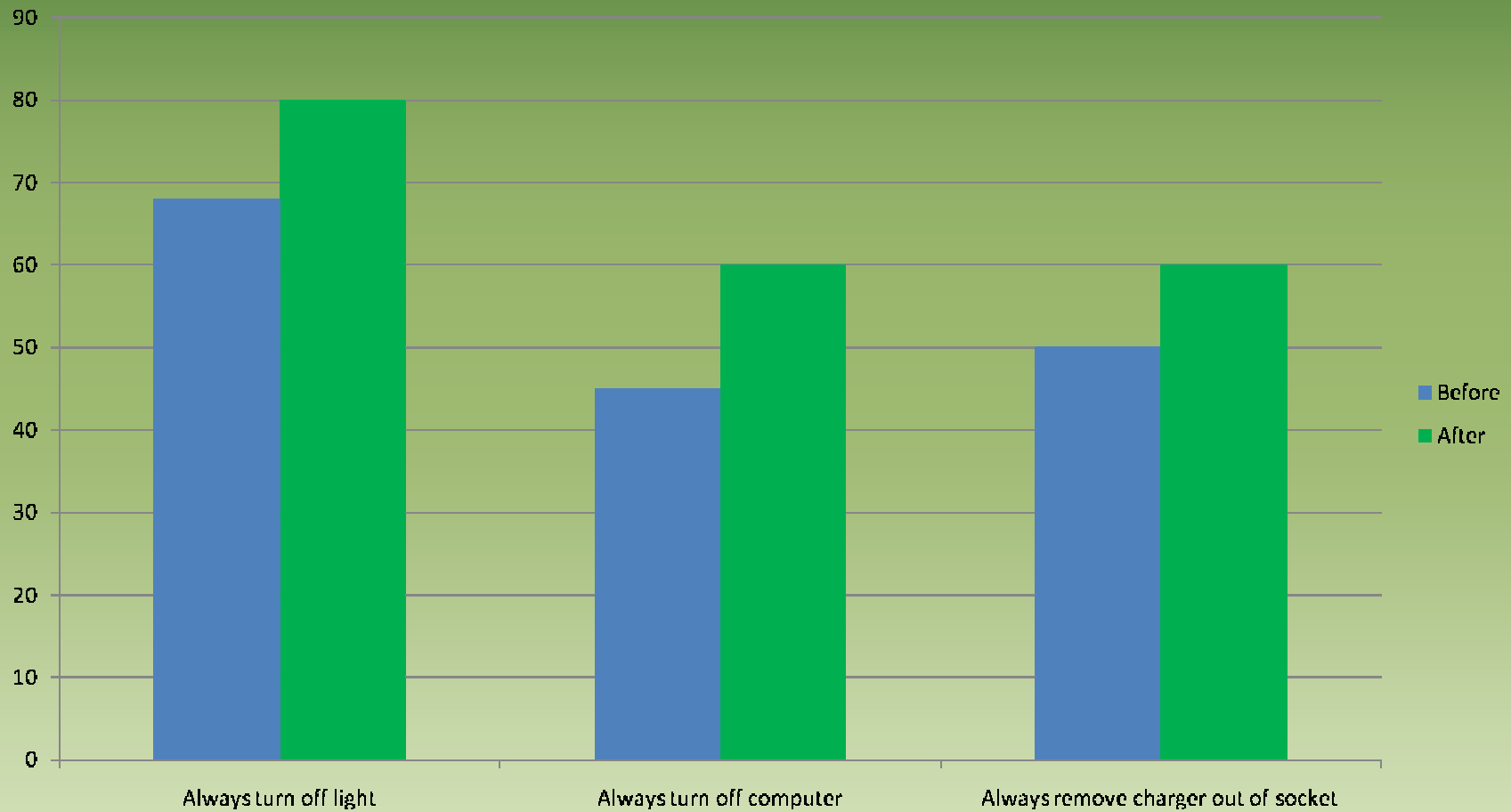
Improved knowledge and awareness → improved behaviour



More hours spent, more awareness



Examples of improved behaviour

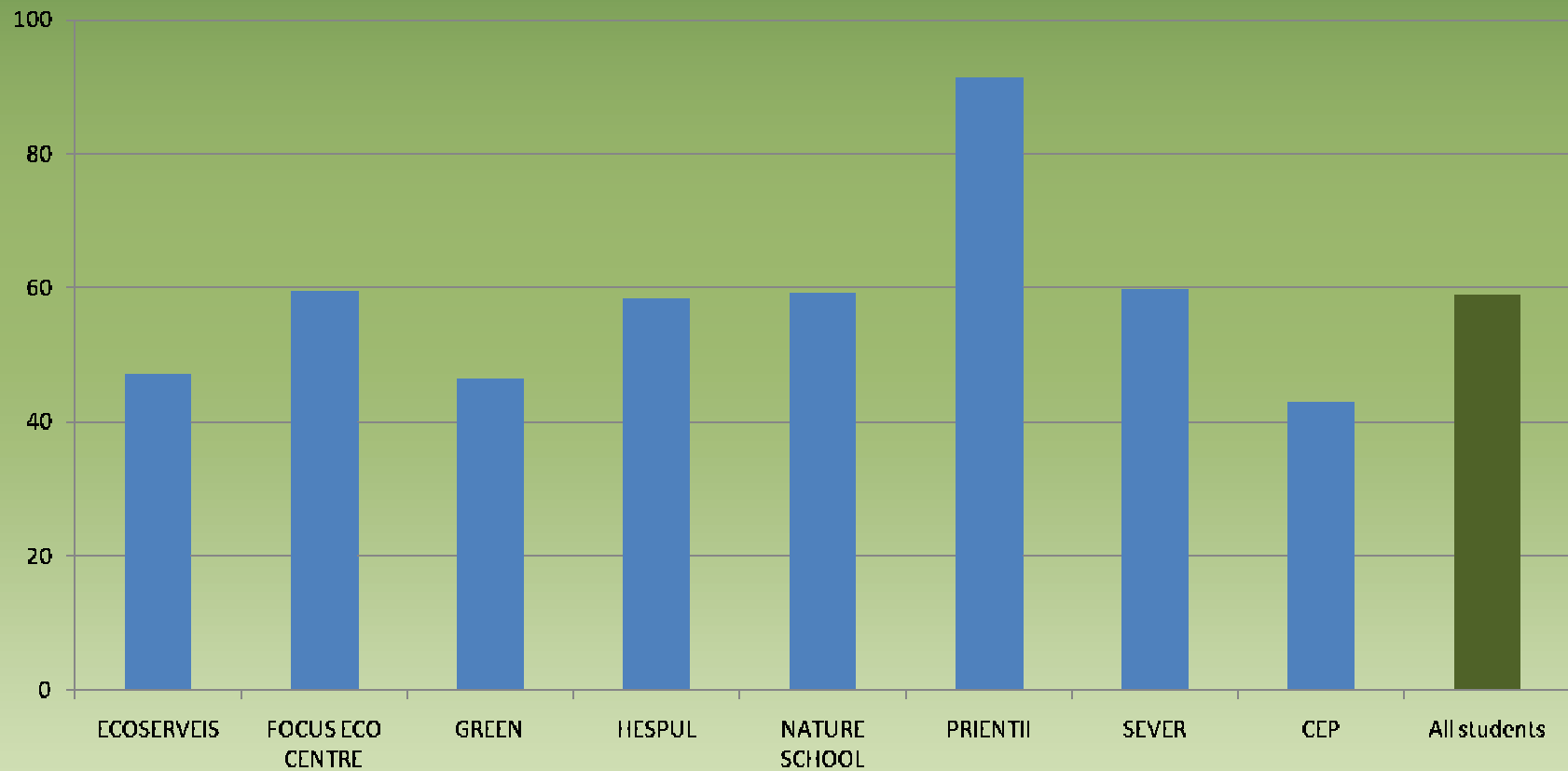


Indicators for Product Evaluation

- % of students satisfied with Energy Consultancy
- % of students satisfied with Research Period
- % of students satisfied with Presentation
- % of students satisfied SIEU as a whole

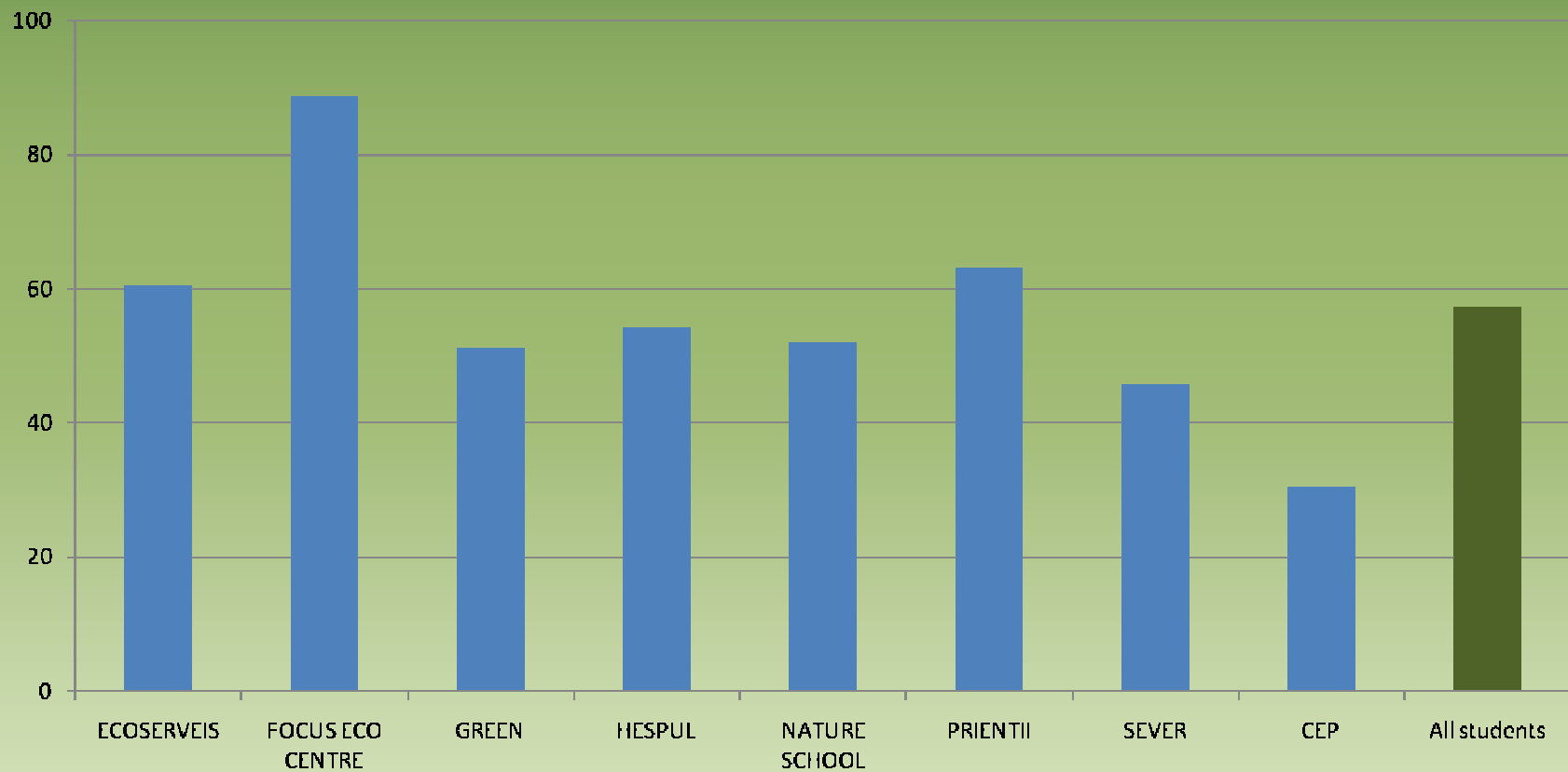
Energy Consultancy

% of students satisfied with energy consultancy



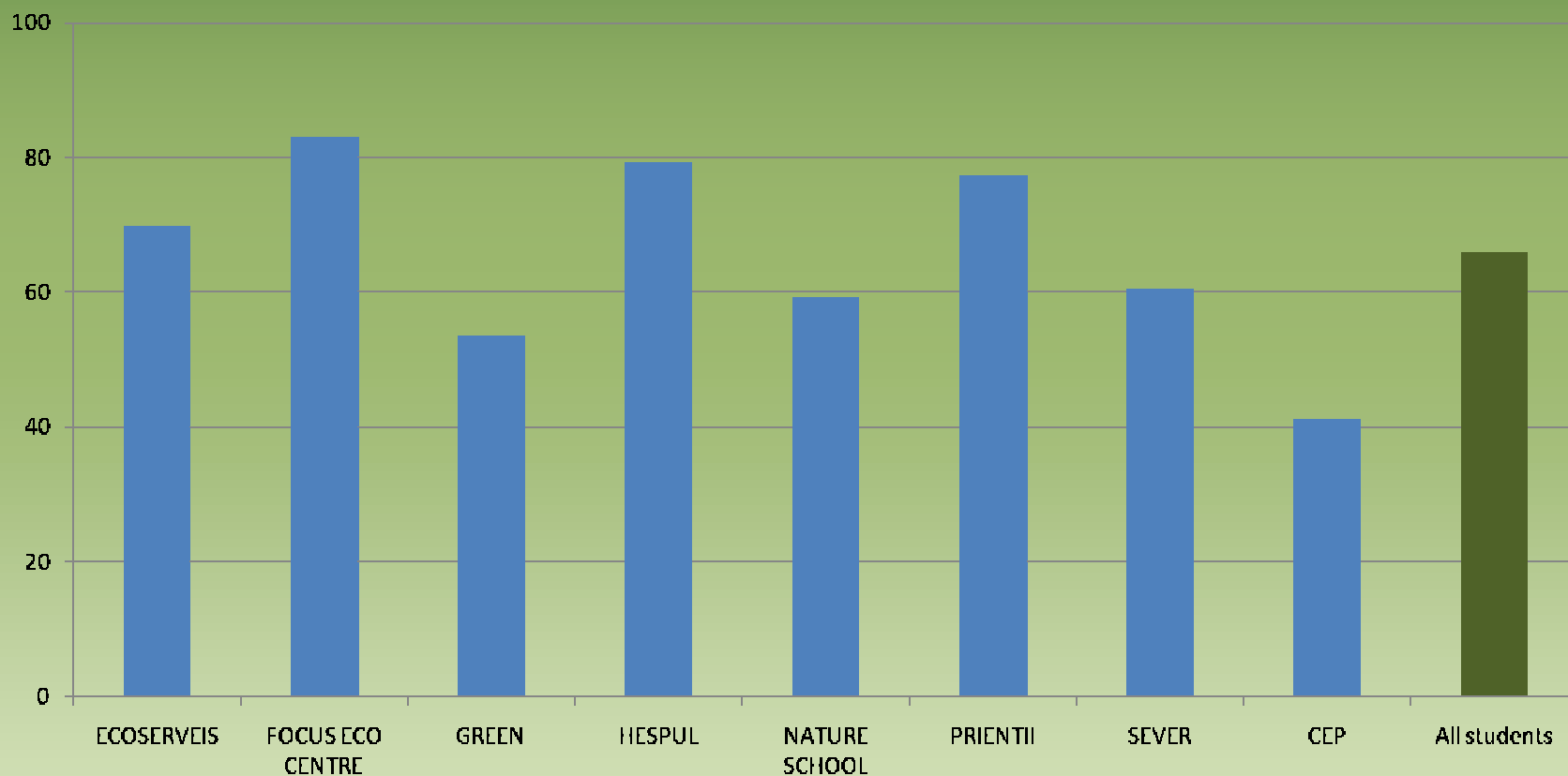
Research Period

% of students satisfied with research period

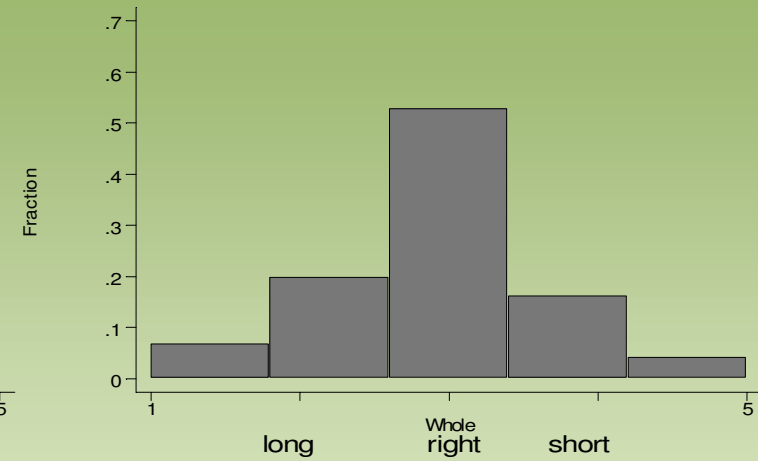
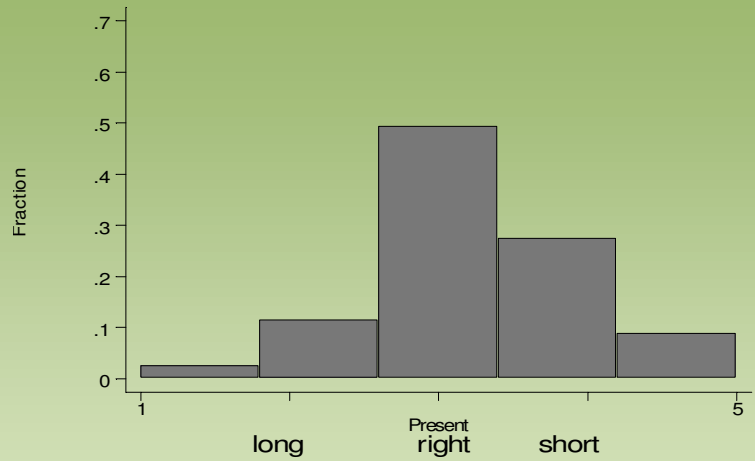
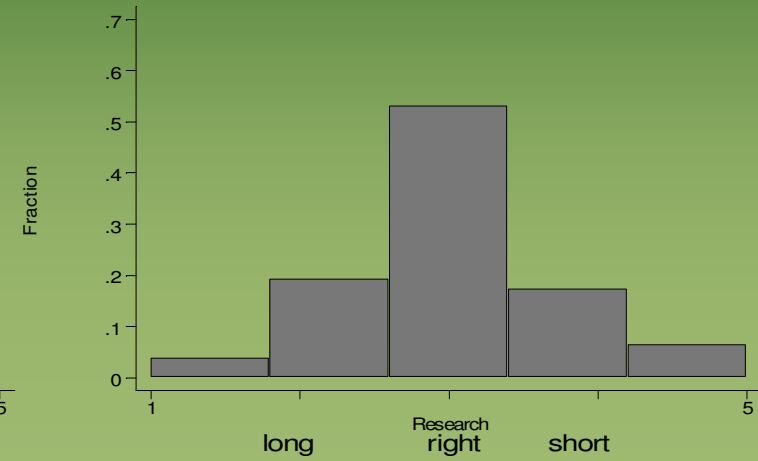
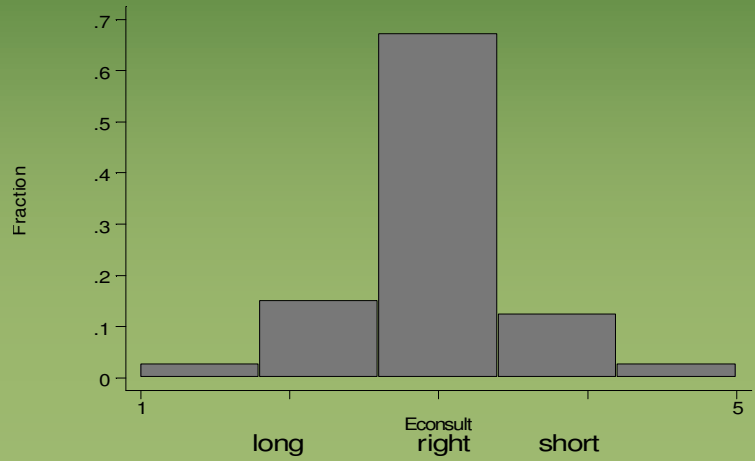


Presentation

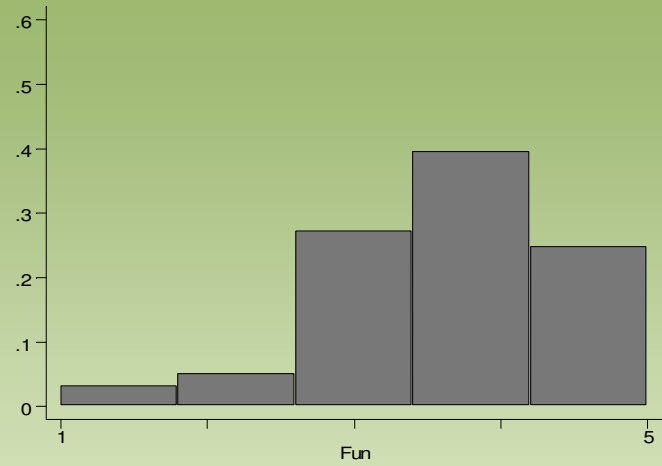
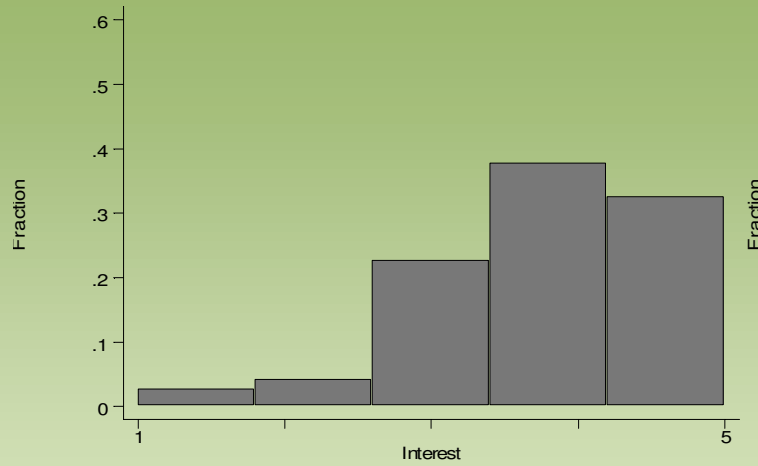
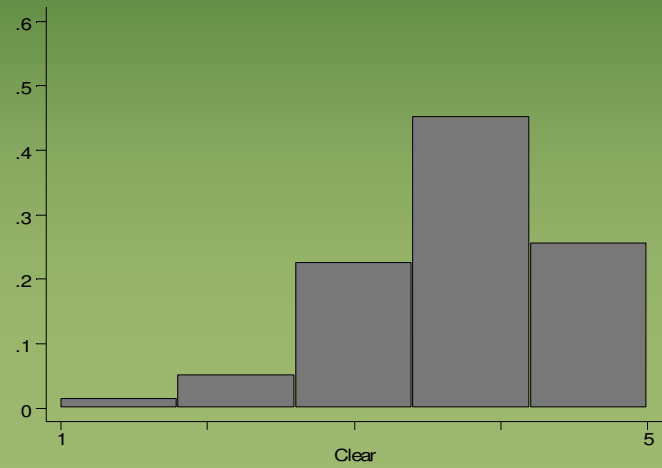
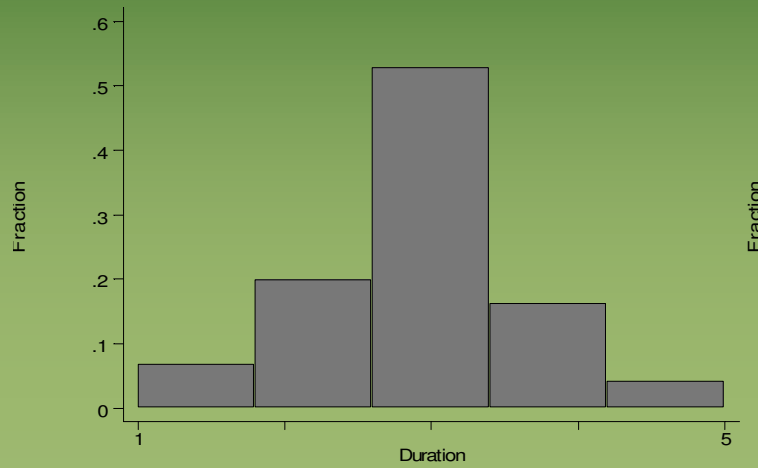
% of students satisfied with presentation



Satisfaction with duration of different parts of SIEU

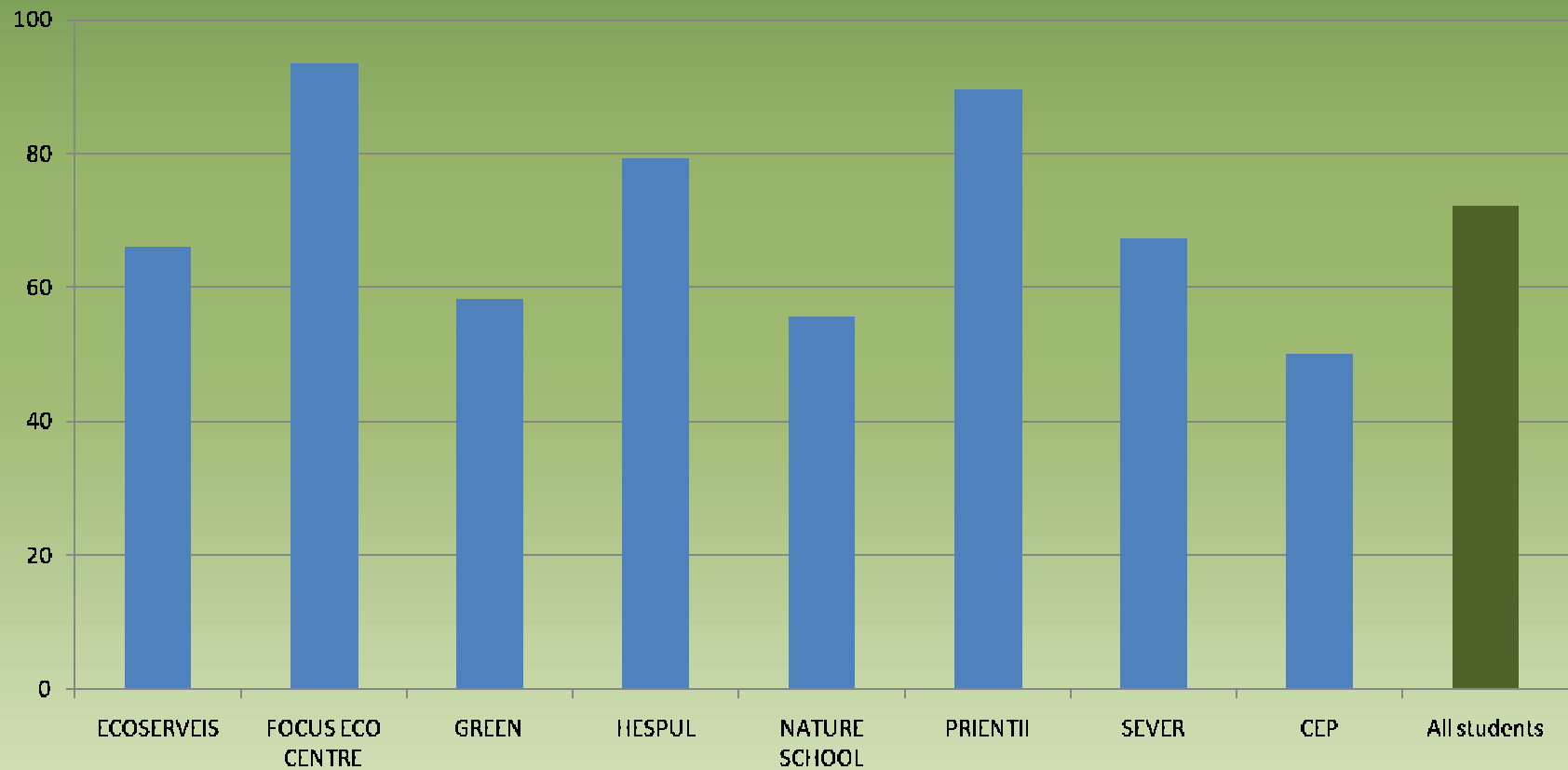


Satisfaction with SIEU by different aspects

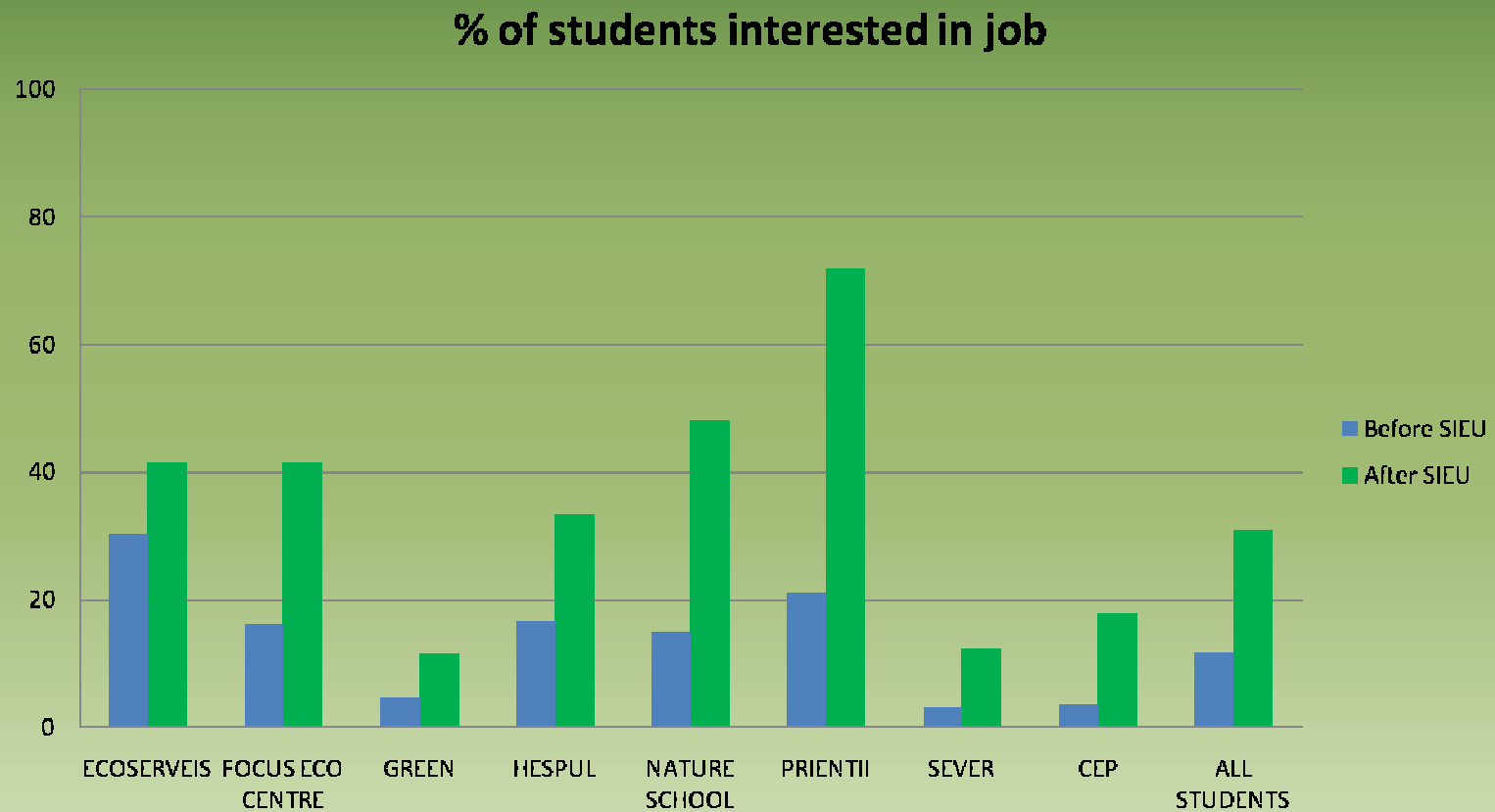


Whole Project

% of students satisfied with whole project



SIEU creates interest in job



Teachers

- AFTER SIEU → Checklist and Questionnaire

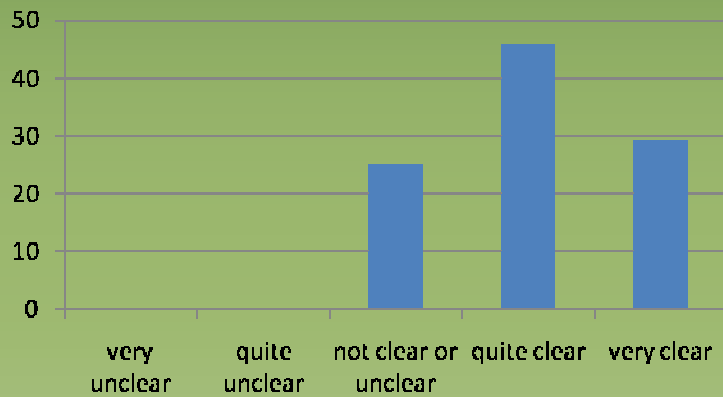
Number of Classes	48
Average age of teachers	45
Female/Male	50/50
Average number of students per class	15
Total number of Companies	41
Average number of days lead time	117
Average number of hours	33

Indicators for Product Evaluation

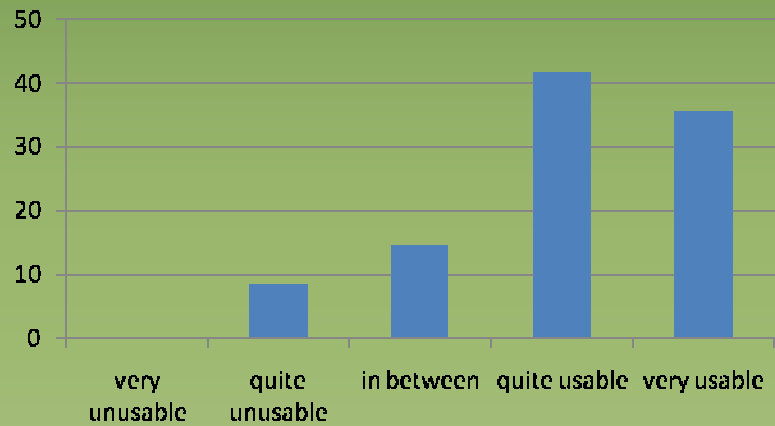
- % of teachers satisfied with project planning handbook (Blue Print)
- % of teachers satisfied with teacher training handbook
- % of teachers satisfied with energy fact sheets
- % of teachers satisfied with SIEU as a whole

Blue Print

Clearness

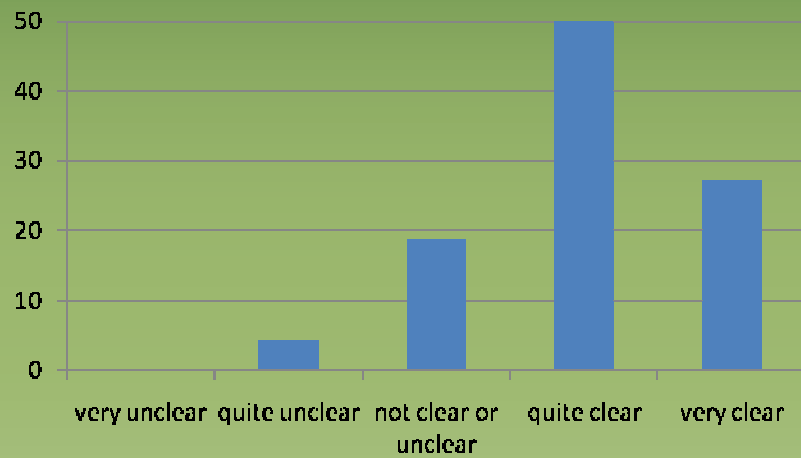


Usability

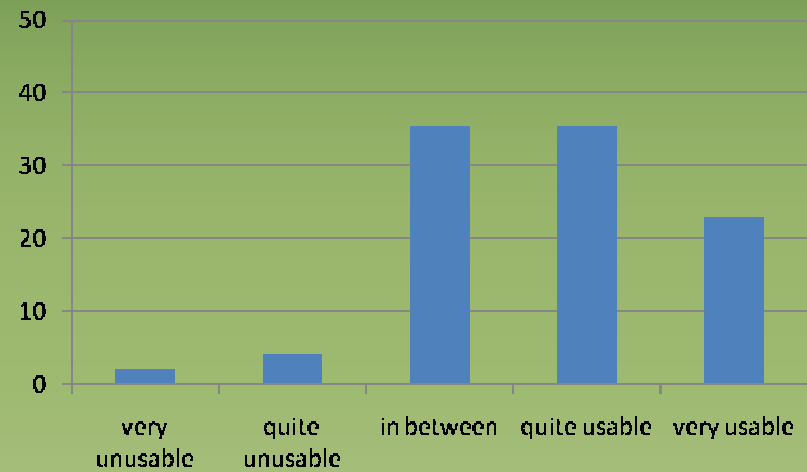


Website

Clearness



Usability

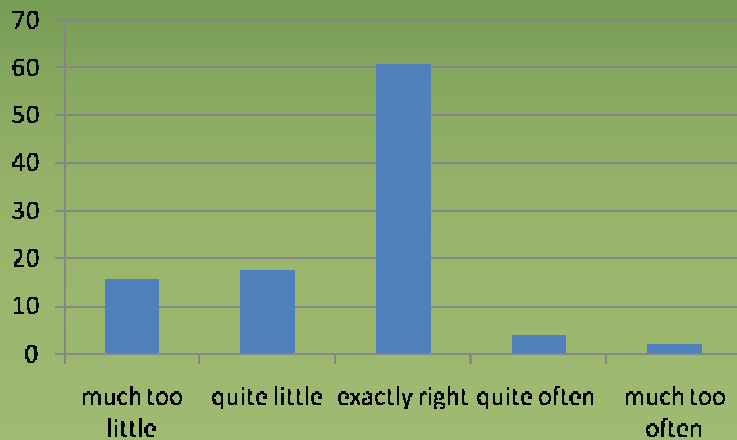


Indicators for Process Evaluation

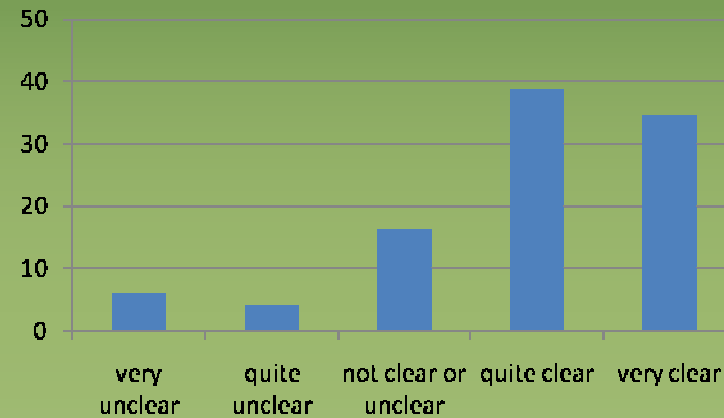
- % of teachers satisfied with contact students with companies
- % of teachers satisfied with storyline approach
- % of teachers satisfied with the training
- % of teachers satisfied with SIEU as a whole

Contact of students with company

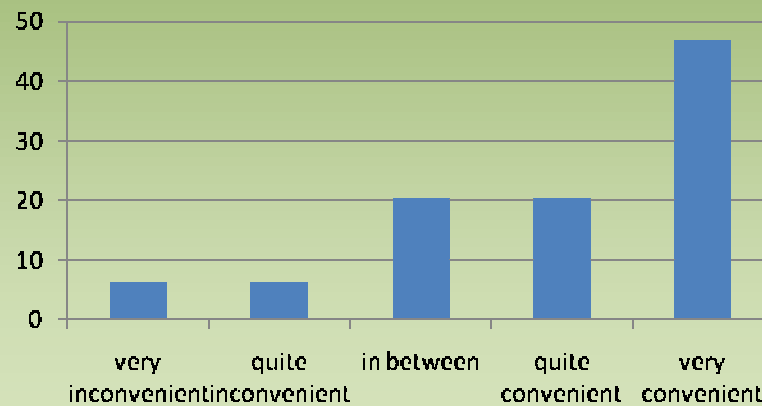
Frequency



Clearness for students

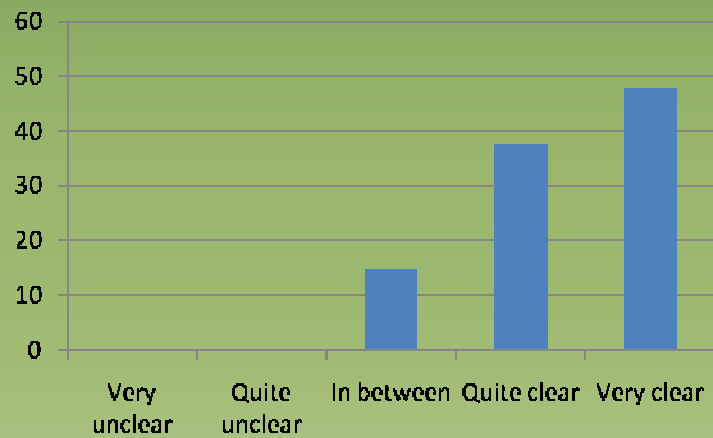


Convenience for teacher

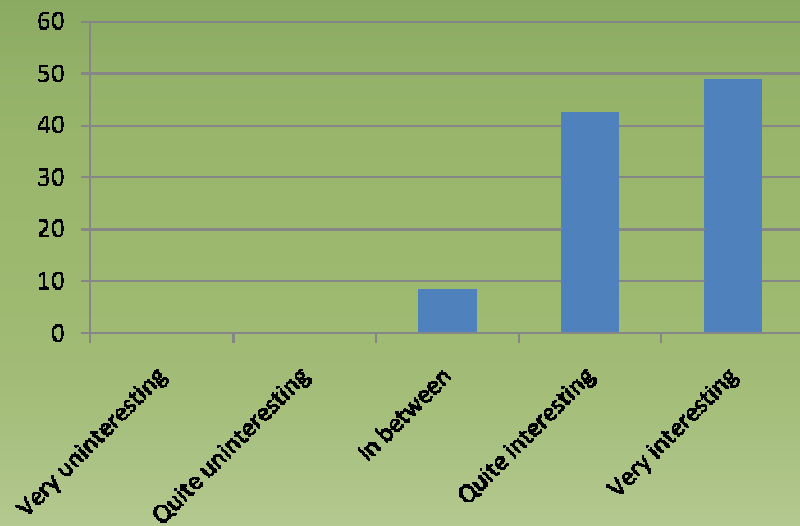


Storyline Approach 1

Clearness

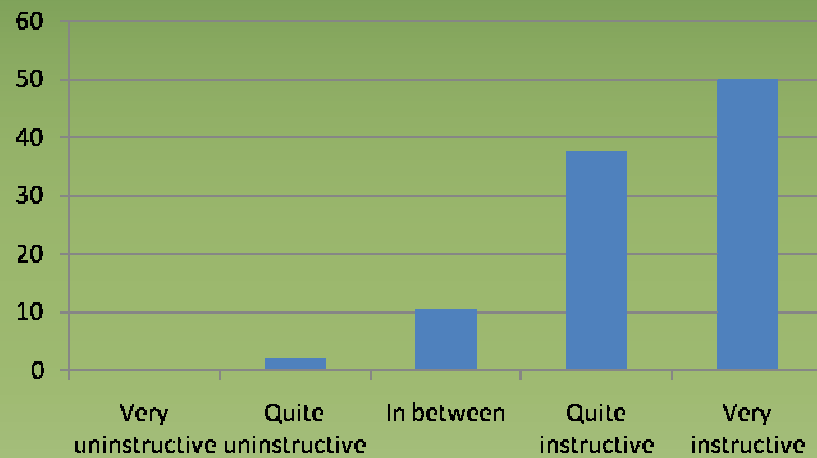


Interesting

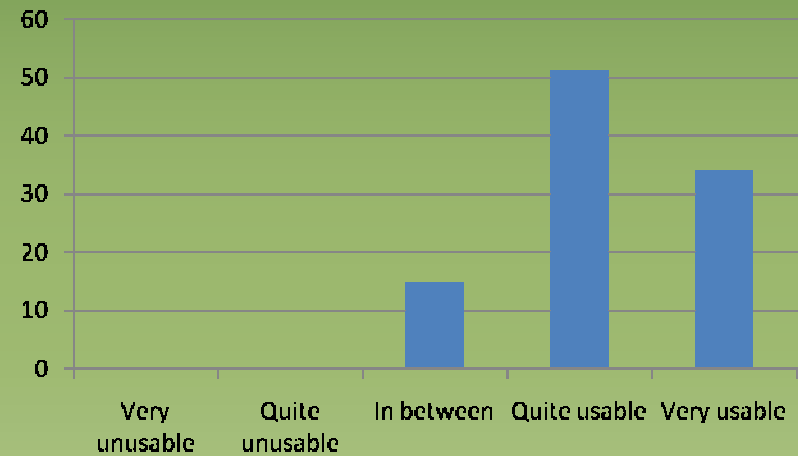


Storyline Approach 2

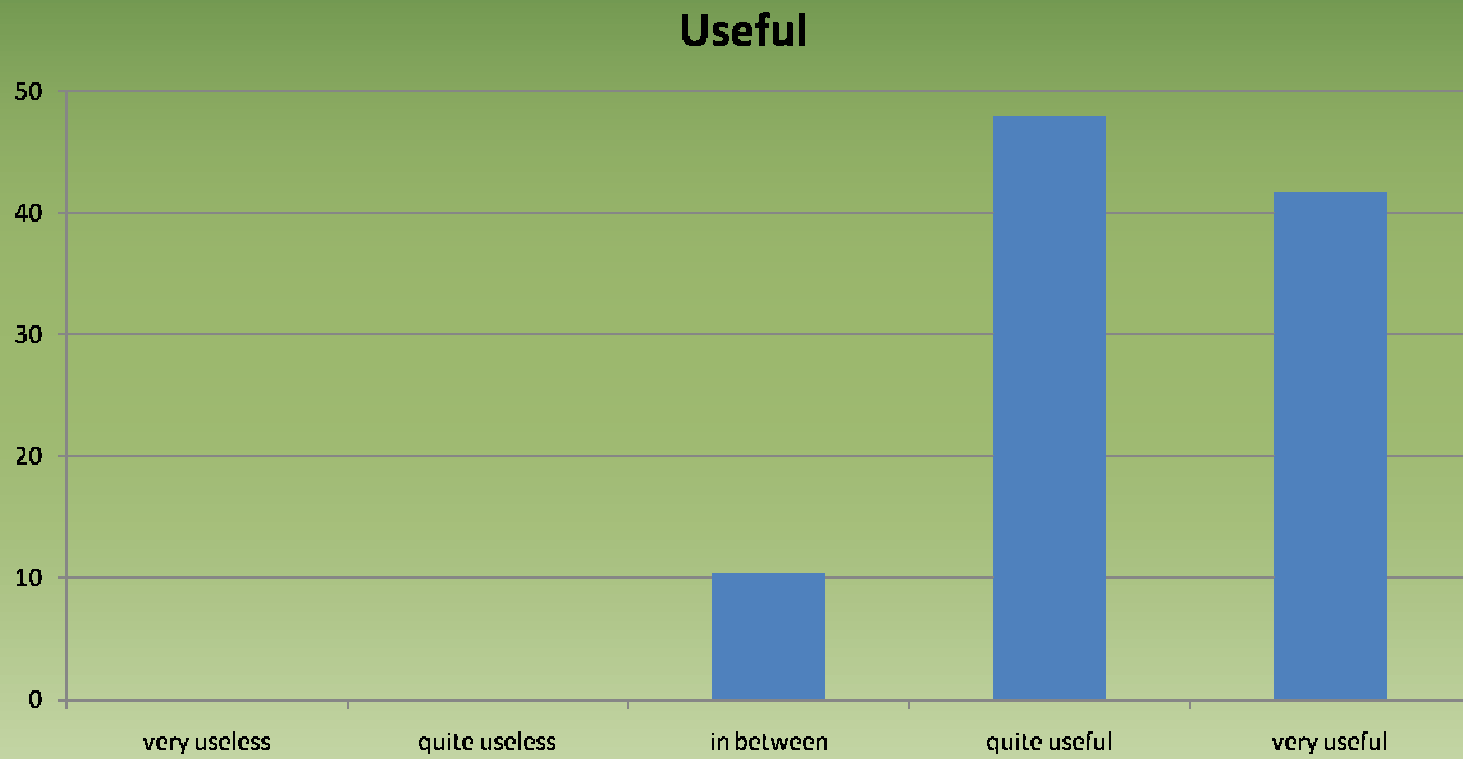
Instructive for students



Usable in school system

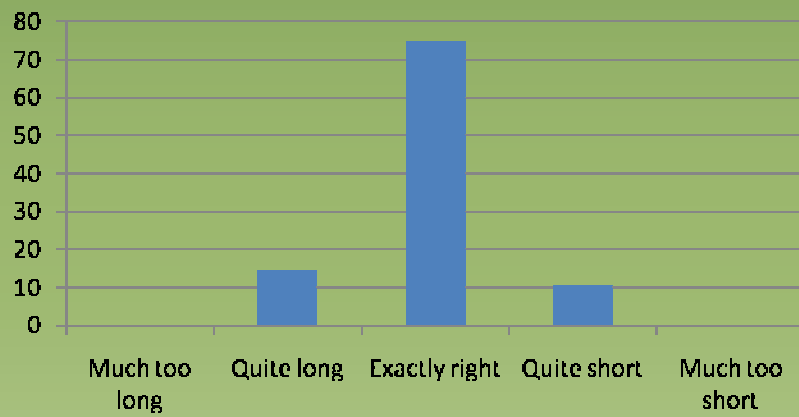


Teacher Training

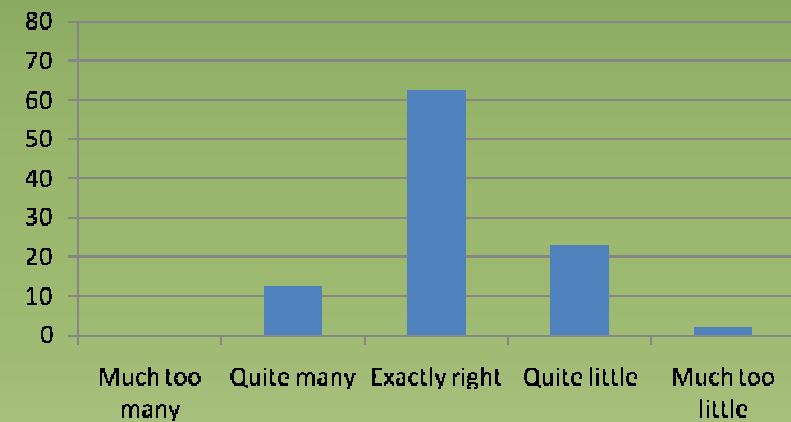


Whole project

Lead time



Hours spent



Companies

- AFTER SIEU → Impact Evaluation
- → Process Evaluation

Indicators for Product Evaluation and Impact Evaluation

- % of companies satisfied with SIEU
- % of companies with intention to use advice
- % of energy to be saved by the company
- % of CO₂ emission to be reduced by the company

What did SIEU promise?

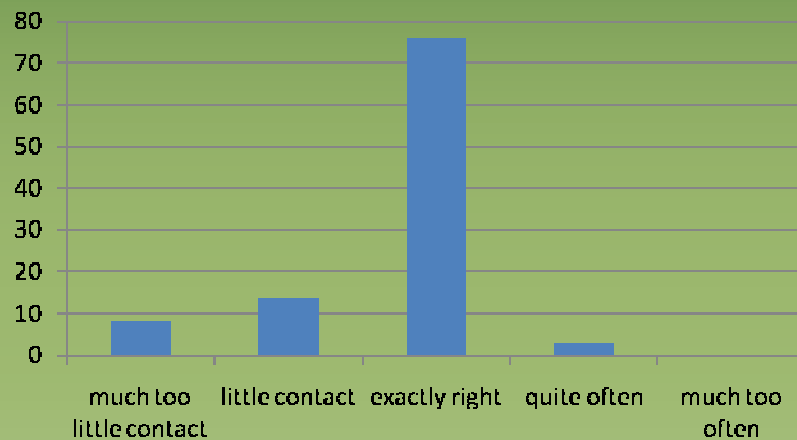
- In the average company participating in SIEU a potential for energy saving of 3 – 5 % will be identified
- Based upon the identified energy saving a CO₂ reduction will be calculated

37 Companies

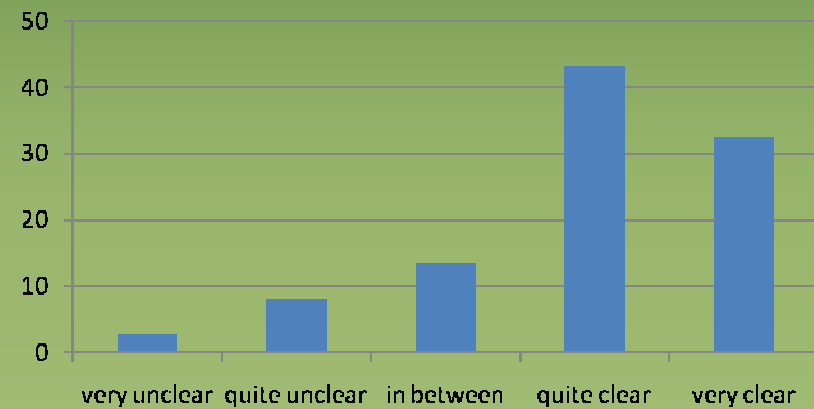
	N
Manufacturing	5
Information and communication	5
Agriculture, forestry and fishing	4
Accommodation and food service activities	4
Construction	3
Education	3
Other service activities, including NGOs	3
Electricity, gas, steam and air conditioning supply	2
Wholesale and retail trade; repair of vehicles and motorcycles	2
Arts, entertainment and recreation	2
Professional, scientific and technical activities	1
Public administration and defense; compulsory social security	1
Human health and social work activities	1
Mining and quarrying	0
Water supply; sewerage, waste management and remediation	0
Transportation and storage	0
Financial and insurance activities	0
Real estate activities	0
Administrative and support service activities	0
households for own use	0
Activities of extraterritorial organizations and bodies	0

Satisfaction with SIEU

Frequency of contact

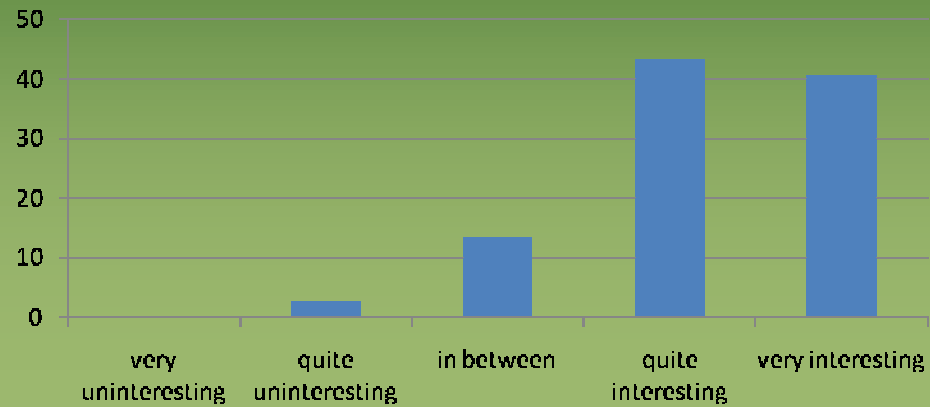


Clearness

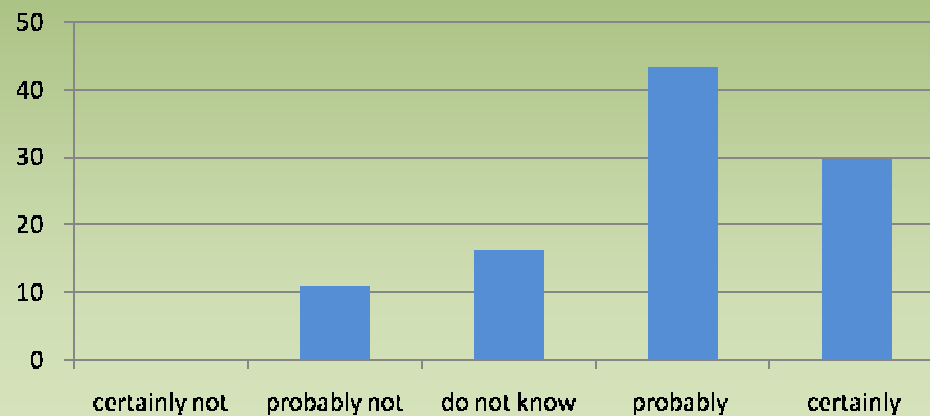


Satisfaction with SIEU

Interesting



Will you use the advice?



Monitored data of 10 Companies

kWh	% saving	m3	% saving	GJ	% saving
3.230	80,0	-	-	-	-
4.050	33,0	-	-	-	-
4.200	25,0	-	-	1.200	10,0
5.000	20,0	-	-	-	-
7.000	10,0	6.000	40,0	-	-
9.360	66,0	-	-	-	-
28.056	20,0	3.500	46,0	-	-
40.000	5,0	-	-	-	-
42.357	10,0	6.343	40,0	-	-
11.000.000	0,5	-	-	-	-

Electricity Saving Potential

- 10 companies
 - Average saving = 7.970 kWh (0,7%)
- 8 companies (highest and lowest dropped)
 - Average saving = 2.764 kWh (15,8%)
- 6 companies (again, highest and lowest dropped)
 - Average saving = 2.756 kWh (17,7%)

Gas and Heat Saving Potential

- Gas:
 - 3 companies
 - Average saving = 2.182 m³ (41%)
- Heat
 - 1 company
 - Average saving = 120 GJ (10%)

Impact

- Saving potential per company:
 - Electricity 2.764 kWh → 1.564 kg CO₂
 - Gas 2.182 m³ → 3.884 kg CO₂
 - Heat 120 GJ → 6.840 kg CO₂

Energy saving

Analysis of total energy saving is possible in 4 out of 37 companies

kWh	% saving	m3	% saving	GJ	% saving
4.200	25,0	-	-	1.200	10,0
7.000	10,0	6.000	40,0	-	-
28.056	20,0	3.500	46,0	-	-
42.357	10,0	6.343	40,0	-	-

Energy saving potential

For the average company:

- Energy saving = 22%
- Emission reduction = 6.400 kg CO₂
- *'One 1 household'* = 4.500 kg CO₂

Conclusions

- Students, Teachers and Companies are very satisfied with SIEU
- Students have improved knowledge, awareness, attitude and behaviour
- Teachers and Companies would like more contact between companies and students
- Companies save energy and CO2
- SIEU was well monitored

Planning of the 2nd school year

- We will remove mistakes in your data sheets but keep all students in your data sheet
- We will mail you the repaired data sheet
- We will add some extra instructions in the data sheet
- You fill in the results of 2nd school year in the same data sheet and send it to us in april 2011
- IVAM makes the final evaluation report

END

Questions? Doubts?
Contact IVAM!

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THANKS!