The Life of « PI »
Integrator project
presented by Jean Lecocq, Brandenburg, July 2018
Keywords

▷ 1st bachelor & 1st master students
▷ Model
▷ Teamwork
▷ Coaching
▷ Interdisciplinarity
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An approach to PI

- Teaching unit with 6 ECTS
- Given topic
- Design brief
- Budget (ECAM + students)
- Draft project + Scientific paper + Presentation + Model
Learning Outcomes for 1 BA students: 6 ects

- proposes new concepts or innovations aiming at creating, improving or adapting systems to meet specific needs
- schedules the required tasks to complete a project
- acts as an active partner with teammates
- presents both orally and in writing structured information from various references or as a result of careful study
Supposed Advantages

▷ Diversification of pedagogical offers
▷ Interdisciplinarity
▷ Opening to other skills, stimulates creativity
▷ Engineering training through concrete project achievement
▷ Early (1BA) familiarity with the engineering job
▷ ECAM visibility during various exhibitions (in- and outside school premises)
▷ Low drop out
▷ Assessment of multiple skills
Expected Difficulties

▷ Start from scratch
▷ Composition of the teams
▷ Finding « good » topics
▷ Network (companies, sponsors, goodies, …)
▷ Constraints (rooms, schedules,
▷ The « Unexpected »
Implementation

5 academics

Supervising students
Team Management

+/− 20 students 1 MA
2 or 3 teams per supervisor

team PI
Project Management

PI
Design brief, budget, prototype

Students 1 BA
Teamwork (6)

49 teams, trained by teachers
Planning

Q1: choosing the topic, coaching the 1 MA supervisors (in terms of project management & communication)

Q2:

Late Jan
Launching week, Coaching 1BA students:
- Project management
- Presentation
- Topic

Feb
Draft project, to be accepted by the PI team
Weekly meetings between supervisors and their team
Weekly meetings between PI team & supervisors
Regular meetings between PI team & 1 BA teams
Possible draft presentation with the supervisor

Late Apr
Mid-May
Presentations & Exhibition
Award Ceremony
- Aesthetic
- Eco-friendly
- Original
- «Engineered»
Composition of teams

- Rule of 6
- Personality test
- Results of courses in Q1
- Girls...
Launching the project
Evaluation (1BA): 3 types

- Continuous assessment [60%]
  - Meeting deadlines
  - Sociogram
  - Continuous assessment meetings

- Presentation assessment [30%]
  - Question time
  - Model
  - Presentation

- Written assessment [10%]
  - Model 3D
  - Paper
  - MCQ
Evaluation: team vs individual

Team activities [44%]
- Meeting deadlines: 24%
- Scientific paper: 21%
- 3D model: 10%
- Presentation: 8%
- Questions: 3%
- Model: 34%

Individual activities [56%]
- Continuous commitment: 27%
- Sociogram: 9%
- MCQ: 64%

Assessment activities
- Meeting deadlines: 5%
- MCQ: 36%
- Scientific paper: 15%
- Drawings: 11%
- Questions: 15%
- Oral presentation: 9%
- Model: 5%
- Sociogram: 1%
1 BA students evaluate their 1 MA supervisors (3 ects)

<table>
<thead>
<tr>
<th></th>
<th>Supervisor evaluation</th>
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<th>No opinion</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>The supervisor is able to answer any questions</td>
<td>++</td>
<td>+</td>
<td>-</td>
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<td>2</td>
<td>The supervisor respects the schedule of the weekly meetings</td>
<td>++</td>
<td>+</td>
<td>-</td>
<td>-</td>
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<td>No opinion</td>
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<td>3</td>
<td>The supervisor resolves the conflicts inside the team</td>
<td>++</td>
<td>+</td>
<td>-</td>
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<td>No opinion</td>
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<tr>
<td>4</td>
<td>The supervisor is an efficient help</td>
<td>++</td>
<td>+</td>
<td>-</td>
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<td>No opinion</td>
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<tr>
<td>4</td>
<td>The supervisor can motivate us and helps us reach our objectives</td>
<td>++</td>
<td>+</td>
<td>-</td>
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<td>No opinion</td>
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<td>5</td>
<td>What are the 2 main qualities of the supervisor??</td>
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<td>6</td>
<td>Which 2 aspects can the supervisor improve?</td>
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Confirmed Advantages - Strengths

- Team spirit
- Healthy competition
- Various skills are evaluated
- Fewer dropouts than before
- Hands-on activity from the start of the curriculum
- Commitment of students (1 BA + 1 MA) & academics (PI team + Jury)
- Ecam = hive of activity on presentation & exhibition days
- Awards + Evaluation (team + individual)
- Constant room for improvement
Confirmed Difficulties – Weaknesses

- Huge organization
- « Trial & Error » strategy
- Drop out during project work
- Too much involvement (to the cost of other courses)
- External help: impossible to control
- Reluctance of some lecturers
Final words

- 49 teams → 49 presentations (in 2018)
- Absenteeism: +/- 12%
- Proud & motivated students
- Many parents attend the exhibition of models
- Waow!
Topics
Models 2015
Models 2015
Models 2016
Models 2017
Models 2018
Models 2018
Exhibition
Award Ceremony
For the record...

The way the teams are composed makes them richer, despite what we might have thought.
*Charles Luyckx, student 1BA*

The supervisor is there to check that the tasks are well distributed within the team
*Hocine Djabella, student 1BA*

We would like to have such a project every year!
*Johanna Katsers, student 1BA*

A very rich experience which allows to face the practical aspect of our future job originally.
*Tom Selleslagh, student 1BA*

The draft presentation with our supervisor was really hard to prepare but it could develop our team spirit
*Florian Vandensteent, student 1BA*
For the record…

The PI proves that practice is very different from theory
Harold Mahaux, student 1MA

Our role is not to work on the project but to manage a team, a new & rich experience
Maxime Angé, student 1MA

Team management can’t be learnt in books or on Internet, Practice, practice, practice!
Harold Mahaux, student 1MA

We had to adapt to the team environment, just like a chameleon does… Antoine Verghote, student 1MA

Preparing the meetings is paramount! Not an easy job…
Antoine Verghote, student 1MA
Remarkable! So much creativity & expertise in 1BA… What will it be when those same students are in the 2 MA, five years later? Pierre Léger, eco-consultant at Village Partenaire

I would have liked to have this course in my University curriculum
Quentin Lurkin, academic

Some students were really proud of what they could achieve
Agnès Callewaert, academic

What a thriving atmosphere in the exhibition room! How good it is to see those busy & enthusiastic students we usually meet in the overcrowded classrooms!
Ruben Hillewaere, academic

Cooperation between 1 BA & 1 MA students reinforces the ECAM image & culture
Xavier Vandendooren, director

How to do better with less? The PI has solved this equation which is constanty in the education at all levels
Emmanuel Peeters, academic
Where the magic happens

Your comfort zone
Questions - Discussion

▷ Well, …any questions?
▷ Any similar experience in your institutions?
▷ Is such a project (with a model) specific for engineering studies? Can it be applied to other fields?
▷ Do students learn more with PI’s than with « traditional » classes?
▷ Do you perceive possible improvements?
▷ SWOT debate