FOREIGN LANGUAGES CENTRE:

- 45 teachers of English
- 12 teachers of German
- 5 teachers of Romance / Romanic languages (French, Spanish & Italian)
- 3 teachers of Russian
HOW MANY STUDENTS OF ENGLISH DO WE HAVE?

45 \times 9 \times 16 = ?
PBL METHOD

• CLIL – Content and Language Integrated Learning
• Telecollaboration

PBL IN NUMBERS:

• 2014 / 2015 – 3 projects
• 2018 / 2019 – 13 projects
A cross-border interdisciplinary project in the ESP classroom

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Gliwice, 2019

Silesian University of Technology
Foreign Languages Centre
A cross-border telecollaborative project:

- international online project
- international teams
- project task to match the students’ studies
International Car Project
**Aims:**

- prepare for future career challenges
- knowledge sharing

**Soft skills:**

- team work
- communication and collaboration
- complex problem solving
- people management
- time management
- ICT literacy
Subject matter of the project:

To design a remotely controlled car, test its suitability in a given environment and determine its business viability.
Engineering & Business Teams:

- 2-3 students/country
- Wireless Connectivity & The Business
- Bodywork & Financing
- Power Source & Market Research
- Traction and Steering & Advertising
- Engine & Costing specialists
- Shock Absorption & Expansion
Communicating/ monitoring – common gmail address
Hello Everyone! I'm the English teacher from Grenoble. The Facebook Group is a good idea. For you all to get started on your specific part of the car, you should first mutually agree on the size of the car and the type of surface you would like it to run on (rocks, sand, mud, grass, all terrain, or just flat and smooth, etc.). You should also consider the max speed and the public targeted (how fast will it be able to go, and who will control it... kids, adults??). What type of car will you be building (truck, buggy, car, etc.). I'm sure I'm forgetting some things, but I'll let you do the thinking.

Pawel Nowak and 1 other

1 Comment  Seen by 4

Like
Comment

Hello everybody!
Here's our little graph of cooperation, which we have made for us, to know which groups will need to cooperate during our project.

Fraction and steering
Suspension
Body
Wireless connection
Power source and charger
Engine
Introductory tasks: games and videos
The Padlet game
Planning: Instructions and Deadlines

**Week 1**
Technical and business solutions agreed

**Weeks 2&3**
Car specifications and business planning completed

**Weeks 4&5**
Teams consolidate to connect the car parts together. Elements of business plan finalised

**Weeks 6&7**
Team presentations of the whole project
Engineering Tasks - carried out by the French and Polish students

- **Bodywork team**: design car shape and dimensions
Engineering Tasks

Engine team: Find the best motor for the car

8,000 rpm
Engineering Tasks

Traction and steering team: design a steering mechanism

Ideas and Problems

Karol Jaksik 22/10/2018
I have a vague understanding of how an RC car is built (edited)
but my friend knows some things and he told me that we should use 4 engines instead of one
and it's going to turn like a tank (edited)
I hope it will work (edited)

Yohann Veron 22/10/2018
maybe 4 engines is better but more difficult to do? I don't know

Karol Jaksik 10/11/2018
@Yohann Veron
Ok Yohann, what do you think about the wheel size?

Yohann Veron 10/11/2018
the wheel from rcplanet?
Wheelbase: 6.44" (163.5mm)
Wheel Diameter: 1.63" (41.5mm)
?

Karol Jaksik 10/11/2018
I watched some tutorials and the more used way to control the steering is steering arms directed
by a servo motor (edited)
I guess the diameter is not big enough
We have a pretty powerful motor on our hands
So we can get something bigger which will provide us with better traction
I've found a sweet pack of wheels with 2.5" diameter
Conclusions

- Servo motor
- Steering arms
- Wheels
Engineering Tasks

Shock absorption and suspension team:
Design suitable suspension for the car.

First contact, communication, discussions
First idea

Ockham's razor

Entities should not be multiplied without necessity

Simpler solutions are more likely to be correct than the complex ones.
Final solution:

Artur:
How about doing this schema with springs?

Guillaume:
I don't know, we have many options, there are many types of springs made in different materials, and we still didn't even speak about hydraulic springs.

Dawid:
I think that since we are making a buggy/offroad type of car, we should use springs made of steel mounted on the oil shocks. I think it's the most commonly used option for this type of car 😊 ... what do you think?

Guillaume:
It sounds good but do you know where we can find something like that that could fit with for a reasonable price?
**Engineering Tasks**

**Power source team:** find how to charge the battery

First contacts with the Hungarian and the French teams

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Hi. Nice to meet you. So our project is to do a market resource for your electric car and we did a questionnaire about that.

I want to ask you to read it and please tell me your opinion about it or if you want to correct some question or answer please tell us.

[Link to Google Form](https://goo.gl/forms/rjYcGqyrHDLgV18w2)

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**Market research for an electric toy car**

We are university students from Budapest Business School. We are doing a market research for a telecollaboration project. This would be a big help for us if you...

docs.google.com
Battery specifications
Capacity: 1200 mAh
7.2 Volts
Weight: 120 - 165 grams
Width: 30 - 50 mm
Height: 10 - 20 mm
Length: 80 - 110 mm
Charger:
2 or 4 Amps
Type: 12 V DC power outlet
Engineering Tasks:

Wireless connectivity team:

- Build an application on a smartphone to control the car
- Connect the car and the app wirelessly
Pictures of the application
**Business Tasks**

**The business team**
- Company description, potential customers, the product and services organization

**The costing team**
- Estimated costs of spare parts, labour, transporting, marketing, warehousing

**The financing team**
- Internal finance
- External finance
- Crowdfunding

**Expansion team**
- Diversification
- Growth
- Internationalisation

**Hungary**
Business Tasks

The market research team: prepare product surveys and conduct them among peers

Questionnaire
Home and Foreign opinions

Potential customers:
kids
amateurs
RC model enthusiasts
How much would you spend on this car?
What motivates you to buy a product?

- Experience of customers: 52.9% (Hungary), 69.2% (Abroad)
- Trends: 35.3% (Hungary), 46.2% (Abroad)
- Wrapping: 29.4% (Hungary), 38.5% (Abroad)
- Advertisement: 23.1% (Hungary), 52.9% (Abroad)
- Guarantee: 64.7% (Hungary), 84.6% (Abroad)
The final presentation consisted of:

- presenting all stages of the project and answering questions concerning the product
International Telecollaboration Project

Introduction

The aim of this report is to give some information about the international project that took place during the third semester of Computer Science studies. The main subject of the project was to design an RC car in cooperation with the Grenoble University Alps and Budapest Business School. The coordinators of the project were Ms Grażyna Duda and Mr Janusz Sroka from the Silesian University of Technology, Ms Sandra Royer from Grenoble and Ms Ildiko Dosa from Budapest.

Stages of the project

First, we had to divide our whole group into smaller teams that would focus on particular aspects of the car. Our team consisted of David Suchy, Karol Jaksik, and Tomasz Wienczor from our university, Thomas Arthosin and Johan Werner from Grenoble as well as Kitti Fisher and Mark Horwath from Budapest Business School.

Our team had to think about how we would steer the car and how the car would grip the surface. We had to start with getting in touch with the foreign teams. That was not an easy task since outside of Poland Facebook is not that common. Not every one of our friends had an account there so we had to improvise. We agreed on using Discord. It is a free internet communicator that we used to talk to each other and send our thoughts and ideas. After that our teachers suggested that we make an introductory movie for our foreign friends and they would do the same. Apart from that, we made a memory game with our faces hoping it would help the French and Hungarian students remember our looks.

After that everyone had to decide on the type of the car. After a long brainstorming session, we agreed on an off-road car because it would be easiest to do and besides, we did not possess enough knowledge about cars to build something more difficult. A lot of research had to be carried out in order to design a steering mechanism. It has the biggest number of moving parts in the car and designing it was not an easy task. Apart from that we had to choose the tyres and wheels so that the car would move over rough terrain. We also had to communicate with the suspension team because our groups were tightly connected and had to work together in order to achieve the goal.

Next came the planning stage. There were some ideas that occurred to us, but we tried to focus only on a few of them. The one that appealed to us the most was putting four engines into the car – one for each wheel. Using a remote controller we would send different voltages to engines so that one would turn faster and one slower. That way the car would turn like a tank. It sounded great for us because it would not involve much mechanical knowledge, but unfortunately after contacting the battery team, we realised that this idea would be very energy-consuming, so we had to come up with another design.

We agreed on a design based on steering arms connected to the wheels. This whole thing would be moved by a servo motor connected to the Arduino chip that the wireless communication team thought of. A 3D model was also made that would be used during the presentation to show the idea of our steering mechanism. When it comes to the traction part of our project, we let our imagination run wild and we agreed to put large wheels with aggressive-looking tyres because that's what most of off-road cars have.

The last thing for our project was to present ourselves in front of English teachers from our university and also our students. We made a PowerPoint presentation containing all of our ideas and designs, as well as an introductory video in which we talked a bit about ourselves and acted out some jocular scenes. The video got our audience interested into the presentation, which was
Feedback:

Course evaluation questionnaire:

- Home team functioning
- Telecollaborative team functioning
- Competences improved
- Valuable things
- Frustrating things
- Things that should be done differently
- Other ideas for a telecollaborative project
Students’ evaluation

- Home team: 4.5
- Cooperation: 4.0
- Creativity: 4.0
- Communication with foreign students: 3.5
- General: 4.0
VALUABLE EXPERIENCES:
• learning communication skills
• team work
• getting to know other cultures
• presenting ideas in public
• international cooperation
• contacting foreigners in English
• making friends
• improving technical English
• learning new ideas
• new experience
• learning to be self-reliant
• problem solving

FRUSTRATING EXPERIENCES:
• time management
• insufficient knowledge
• other students’ lack of interest
• delays

EXPERIENCES THAT WERE BOTH VALUABLE AND FRUSTRATING:
• Systematic approach
• Meeting deadlines
Things that should have been done differently:

• Choosing a subject matter more related to students’ field of studies and expertise
• More time for product development
• More responsible foreign students
Other ideas for future telecollaborative projects:

- designing a computer program
- designing a computer / mobile phone application
- making a (short) movie
Thank you!

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Any questions?