

PROTIC

A model program of students
engaged in collaborative inquiry
and knowledge building

TACT, Université Laval



About PROTIC

- ✦ A special program within a high school in Quebec City.
- ✦ Focuses on new pedagogical approaches that integrate information and communication technology.
- ✦ Many classes in the PROTIC program participate in the Knowledge Building International Project.

About PROTIC

✦ Students learn in a 1-1 laptop environment.



Objectives of the PROTIC program vs. KBIP

Objective of the PROTIC program	Description	How participation in KBIP helps to achieve the objectives of PROTIC
Entrepreneurial culture	Developing entrepreneurial skills (motivation, team work etc.) to promote the development of active citizens	Students take ownership of research. They work in teams to deepen their understanding of research questions.
Technological culture	Youth are active and experienced users of technology	Students use videoconferencing, online forums and the internet.
Language skills	Oral and written communication in English and French	Students present their findings at international meetings in English and French.
Exposure to the world	Curriculum that introduces students to all aspects of society (social sciences, natural sciences, arts)	Students collaborate with peers in other countries. They understand their research topics from various international perspectives.

The study context

- ✦ Three classes of grade 7 and 8 students (12 and 13 year olds).
- ✦ The project ran from February to June 2011.
- ✦ The students developed their own research questions emerging from current issues in the region of Quebec.
- ✦ Students were divided into teams of specialists in order to collaboratively investigate their questions further.
- ✦ Students conducted research and collaborated in the KF.
- ✦ They presented their research findings at international meetings with other classes.

Student Research Questions

1. How does the pH level in the water of the St. Lawrence River affect the biodiversity level in the area?



2. Why are there more fish on the south shore of the St. Lawrence river in Quebec compared to the north shore?

Example of a student's contribution in the KF

View: Météorologues

Résultat final Sandrine G.

note final Nicolas B.

PROTIC 33 (2e secondaire - CS Découvreurs)

- Le cycle de l'eau Coralie P.
- Image pertinente sur le cycle de l'eau Coralie P.
- contribution sandrine Sandrine G.
- météorologie.doc
- Contribution météorologues Cynthia P.
- La fonte des glaces Sandrine G.
- La fonte des neiges Sandrine G.
- Le cycle de l'eau Sandrine G.
- AuCanada Sandrine G.
- La couverture de neige Sandrine G.
- Contribution Antoine A. Antoine A.
- Météo Nicolas B.
- amélioration Thomas B.
- Météo 1 Julien C.
- Correction troposphère Antoine A.
- les glaciers Sandrine G.
- Les glaciers Sandrine G.

Note: note final - Nicolas B.

Note Authors Connections Info History

Theory

My Theory

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Putting ou

Problem

Réponse à la question

Il y a plus de poissons sur la rive sud tout simplement parce que le ph est plus neutre. L'effet tampon des sols est meilleur que sur la rive sud. Le sol sur la rive sud est composé de calcaire et d'argile (sédiment) qui on un meilleur effet tampon que les roches ignée qui se trouve sur la rive Nord.

Ce que j'ai appris

J'ai appris qu'il y a plus de poissons sur la rive Sud. Ce que je ne pensait pas avant le projet, car l'eau par exemple: de la rivière chaude et etchemain parait beaucoup plus sale que l'eau de la rivière Jacques-cartiers qui ce trouve sur la rive Nord. J'ai aussi appris que les sédiments on effet tampon plus élevé que les roches ignées. J'ai appris à comprendre l'échelle de mesure du Ph.

La grande réflexion

On se rend compte qu'en dégageant du NO2 dans l'atmosphère on augment l'acidité des pluies ce qui augmente le pH des lacs et rivière.

Keywords

Add Insert Drawing Build-on Annotate Close

inference

synthesis of learning

Links 0 of 20 selected.

Outcomes of participation

Students' Perspectives

- ✦ Developing roles as citizens: « By polluting, we endanger species of plants, animals and hurt ourselves. »
- ✦ Communication and Knowledge Deepening: « We participated in class discussions in the Knowledge Forum, asked questions and developed our answers. »
- ✦ Research skills: « We experimented in labs, learning how to manipulate objects and find the pH level of a substance. »

In the students' own words...

21 MARS 2011

MORE FISH ON THE SOUTH SHORE ?

Why are there more fish in the lakes of the south shore of St. Lawrence River than on the north shore ?

14 years old students will develop environmental awareness in teams of 4.

Students have to :

- understand the situation
- contribute to the forum
- present a video
- experiment in laboratory



Map of Quebec, Canada

The province of Quebec is composed of 3 different types of soil.



4 different jobs in this project

The biologist

Studies the impact of acid saturation on the fishes

The meteorologist

Studies the impacts of the melting snow during spring time on the lakes in Quebec.

The geologist

Studies the 3 different types of soil found in Quebec's region.

The hydrologist

Studies the different sources of water in Quebec.



Christian Perreault



Cynthia Prévost



Hélène Dufour



Mireia Montané



Montserrat Olivera

Conclusion



KBIP allowed PROTIC students to deepen their understanding of sustainable development problems while developing their language skills, technological skills, citizenship skills and entrepreneurial skills.

Moving forward, the project aims to allow students to continue their process of collaborative inquiry, deepening their understanding of new research questions and improving their quality of explanations.

The background features a collage of vintage postage stamps in various colors (red, green, yellow) and floral illustrations in shades of green and yellow. The stamps include text such as 'PAR AVION', 'MADRID', 'POSTAGE', and '100.00'.

THANK YOU!

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