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Does it really give you Wings?

Outcomes

Investigate food groups and discuss their requirements for exercise and activity.

Compare the daily energy requirement of a sedentary versus an active individual.

Research the range of sports drinks on the Irish market. Categorise these as isotonic, hypertonic and hypotonic.
Evaluate and design a sports drink.

Design and conduct an experiment to examine electrolyte content of a number of drinks.

Curriculum content

Bonding, solutions, atomic structure, use of scientific apparatus, concept of current and charge

Learning objectives

Give students an appreciation of the importance of each food type for the body.

Give students sufficient factual knowledge to allow them to investigate the daily energy requirements of a sedentary individual compared to an athlete in training.

Give students an understanding of the different types of energy drinks commonly available.

Student activities

The concept of the inquiry-based module was explained by the teacher. The students were divided into three groups and all were given the scenario to read and discuss.

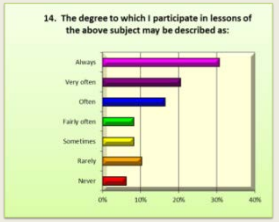
The tasks undertaken by each group:
Group 1 – Researched and designed a poster based on the link between nutrition and athletic performance. They examined food groups, benefits of sports drinks, importance of hydration and types of sports drinks available.

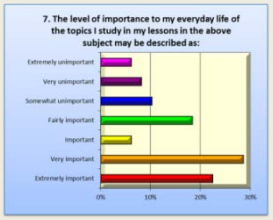
Group 2 – Researched the best types of sports drinks available and the benefits of each one. They designed their own sports drink from their findings.

Group 3 – Planned and conducted an experiment to examine which type of drink contained a suitable amount of electrolytes to be considered to have a positive impact on dehydration and performance.

Results

After completing this inquiry-based module, it is clear that over 50% of the students thought that this topic did relate to their own live.
The majority of the students reacted positively to the problem-based approach to a new topic compared to their previous experiences of introductory lessons.
It was noted however that students may find an inquiry-based approach difficult to engage in immediately so a more structured form may be best to introduce students to it.
It was clear that the students felt more active and part of the lesson compared with previous types of lessons.





Evaluation

- The topic was clear and relevant to the everyday lives of the students.
- It was not gender based and was equally attractive to girls and boys.
- It included Chemistry that was part of the Leaving Certificate curriculum.
- It engaged the students through tasks and problem solving activities.
- The students' tasks were open to adaptation by the students or the teacher.

Conclusion

It was clear that an inquiry-based resource has the ability to nurture a creative and stimulating environment for the students.
Based on student responses, the author discovered that students are mainly passive learners in the classroom and become disillusioned with science as a result. Consequently students are opting out of Senior Cycle Sciences and reducing their opportunities at tertiary level.
This study highlighted that inquiry-based learning can be a workable alternative to the current pedagogical settings of science in the classroom to engage students.