

Current views on the Practical Assessment of Science at Junior Cycle in Ireland

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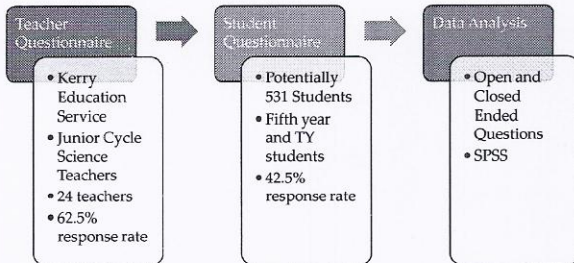
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Introduction

One of the biggest changes resulting from the revision of the syllabus was the increased emphasis placed on **practical work** which was "designed to help students develop an understanding of science concepts, as well as acquire the necessary science process skills" (Eivers et al., 2006, p.3). The syllabus has been identified as an activity based syllabus and "through a variety of investigations and experiments, students attain the specific learning outcomes, developing appropriate science process skills and a knowledge of underlying science concepts" (DES, 2003, p.3). The introduction of Coursework A and Coursework B Coursework A led to the first practical assessment of science at junior cycle level in Ireland. This change was greeted with various opinions from teachers and students which this research study set out to investigate.

Methodology



Results

1. What effect does the practical work component have on the development of student experimental skills, as observed by the teacher?

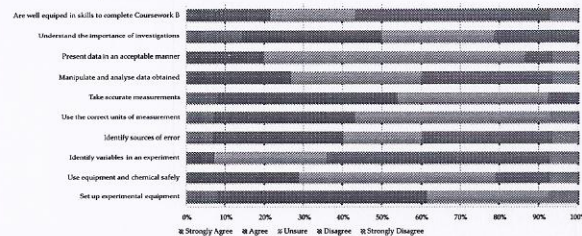


Figure 1: Teachers opinion on effect of practical work (Coursework A & Coursework B) on development of students' experimental skills.

2. How could the Practical work component, Coursework A and Coursework B, of the Revised Junior Certificate Science syllabus be improved in the opinion of science teachers?

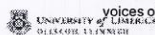
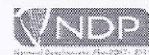
53.3% of the teachers felt that improvements could be made in relation to Coursework A especially in the area of **monitoring of completion and the quantity**. The following comments are a sample of common responses which suggest that the teachers feel the current system of completing 30 mandatory experiments does not provide opportunities for students to develop skills that they need for independent learning and lifelong learning skills.

- "I fear all 30 experiments are ticked even if students don't have them all done. Could this be more heavily monitored?" (Teacher 1)
- "Challenge students to think more on how to investigate the problem" (Teacher 3)
- "Less experiments – more time for detail" (Teacher 14)

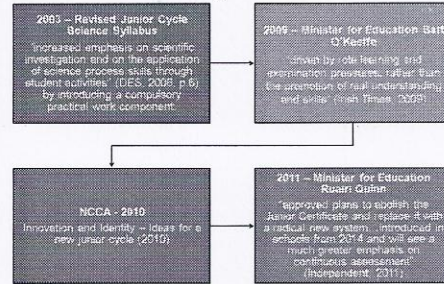
Possibilities for the improvement of Coursework B were also provided with 73.3% of the respondents agreeing that it needed change. Comments related to **improvements of the Pro-Forma booklet** that the students must complete and submit. Similar to research carried out by Higgins (2009) the **language used in the booklet** was deemed not suitable for the students' ability and resulted in a large amount of time being "wasted" explaining words.

References

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Recent Reform in Junior Cycle Science Education in Ireland



Research Questions

Teacher Questionnaire:

1. What effect does the practical work component have on the development of student experimental skills, as observed by the teacher?
2. How could the Practical work component, Coursework A and Coursework B, of the Revised Junior Certificate Science syllabus be improved in the opinion of science teachers?

Student Questionnaire:

1. Do Junior Certificate science students enjoy completing Coursework A and B and how confident are they in completing these practical elements of the programme?
2. How could the Practical work component, Coursework A and Coursework B, of the Revised Junior Certificate Science syllabus be improved in the opinion of science students?

1. Do Junior Certificate science students enjoy completing Coursework A and B and how confident are they in completing these practical elements of the programme?

The students enjoyed coursework A more than Coursework B and the students' level of confidence was much higher for Coursework A than it was for Coursework B.

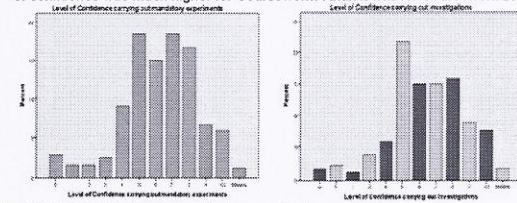


Figure 2: Students' level of confidence in completing Coursework A and Coursework B.

2. How could the Practical work component, Coursework A and Coursework B, of the Revised Junior Certificate Science syllabus be improved in the opinion of science students?

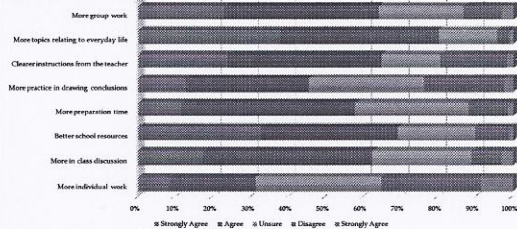


Figure 3: Possible improvements of practical work as viewed by the science students.

Conclusion

The above results show that both junior cycle students and teachers agree practical work is important for the development of scientific process skills however the current system in place, both in practice and assessment requires improvement. It is intended that the successful completion of Coursework A will help develop skills for independent learning and scientific reasoning yet 53.3% of teachers felt that their students in the third year of study they were not equipped with the necessary skills to complete Coursework B. At a time when the current junior cycle programme is under review it is imperative that the voices of students and teachers are heard.