

An Roinn Oideachais agus Scileanna

Department of Education and Skills

**Subject Inspection of Science
REPORT**

**CBS Secondary School
Mountgarrett,
New Ross, County Wexford
Roll number: 63600F**

Date of inspection: 10 April 2014



**A N R O I N N | D E P A R T M E N T O F
O I D E A C H A I S | E D U C A T I O N
A G U S S C I L E A N N A | A N D S K I L L S**

**REPORT
ON
THE QUALITY OF LEARNING AND TEACHING IN SCIENCE**

INFORMATION ON THE INSPECTION

Date of inspection	10 April 2014
Inspection activities undertaken <ul style="list-style-type: none">• Review of relevant documents• Discussion with principal and teachers• Interaction with students• Examination of students' work	<ul style="list-style-type: none">• Observation of teaching and learning during three class periods• Focus-group interview with first-year students• Feedback to principal, deputy principal and teachers

MAIN FINDINGS

- Lessons were student-centred with productive participation and high levels of challenge.
- There was very good emphasis on the investigative approach and students were supported in inquiry-based learning.
- Some very good practice was observed in supporting students' laboratory report writing but this requires development across all class groups.
- The school is very supportive of the sciences in all curricular programmes, providing innovative Transition Year (TY) modules and opportunities in co-curricular competitions.
- Subject department planning is developing well and there is a growing emphasis on discussing pedagogy and progressively developing students' skills in key areas.

MAIN RECOMMENDATIONS

- The monitoring and formative feedback provided on students' written work should be improved and systematically applied, and all students should be required to review their work on the basis of the feedback provided.
 - The subject planning process should be further developed through analysis and reflection on strengths and areas for development.
 - Subject plans could be extended to incorporate learning outcomes, literacy, numeracy and self-evaluation practices.
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INTRODUCTION

CBS Secondary School is co-educational with an enrolment of 273 students. In addition to the Junior Certificate and the established Leaving Certificate, the school provides an optional TY programme.

TEACHING AND LEARNING

- The quality of teaching and learning was good to very good. Lessons were student-centred in planning and delivery.
- The quality of dialogue between the teacher and student was very good. There were high levels of productive student participation in reply to the challenging questions set by teachers and good learning was noted in the responses of students. The needs and abilities of students were very well attended to and the lessons had a commendable collaborative atmosphere.
- There was very good emphasis on the investigative approach to learning in the lessons visited including a theory-based lesson and a practical lesson. The learning activities supported a high level of guided inquiry that enabled students to meet the requirements of the syllabus, provided them with opportunities to observe and evaluate scientific phenomena and enabled them to draw valid deductions and conclusions. This is commended.
- Science teachers support the investigative approach in students' curricular and co-curricular activities. However, all first-year students should be guided to better enunciate their understanding of what constitutes an investigation, including the use of a fair test and a variable.
- Third-year students were observed reviewing drafts of their own laboratory reports on the basis of guidance from their teacher. This excellent practice should be implemented from first year onward.
- While some good practice was observed, the monitoring and formative feedback provided on students' written work requires development. There were evident gaps in the monitoring of student homework copies. All teachers should provide regular and systematic written feedback on all types of students' written work giving them guidance on how to improve their work. Students should routinely review their work on the basis of this guidance.
- Information and communication technology was used well in many instances to support in-class learning and is being developed to support blended learning.
- During one lesson visited, the quality of students' data analysis and graphing was good enabling the development of numeracy skills. In another lesson, an effective literacy strategy enabled students to develop fluency in the spoken and written use of terminology.
- Student curiosity and creativity was being enhanced during the best lessons visited and also through the very good co-curricular opportunities being provided for students to engage in scientific research for science fairs.

SUBJECT PROVISION AND WHOLE SCHOOL SUPPORT

- There is appropriate time allocation to Science in second and third year but the allocation of only three lessons to first year should be kept under review.

- The school is committed to promoting the sciences across the curriculum. This includes having core Science for all junior cycle students and providing both Biology and Physics for Leaving Certificate with good uptake in both options. The school also supports the sciences in TY by providing modules in Design and Discovery and in Horticulture. Students are supported and encouraged in engaging in co-curricular science projects.
- There are good facilities to support teaching and learning in the subjects but the school laboratory is very much in demand for access for curricular classes and co-curricular science research. Some science lessons have to take place in general classrooms. In the context of future development, priority should be given to identifying and addressing the need for a second laboratory.
- There is support for and engagement in teacher continuing professional development and this will further enhance the learning experience of the students.

PLANNING AND PREPARATION

- Teachers engaged in high-quality lesson preparation that provided for the range of student abilities and needs and enabled well-structured learning to take place.
- Subject department planning is developing well. Pedagogical discussions, such as those on redesigning the template for laboratory reports, are particularly valuable as they will progressively develop students' skills.
- Further analysis and reflection as a department on the strengths and areas for development in teaching and learning is recommended.
- Analysis of student outcomes in certificate examination should be extended to the monitoring of long-term trends in attainment and the uptake of levels.
- The course outline prepared for the TY Design and Discovery module is commended as it is written in terms of what students will be able to do and achieves a very good balance between the development of content knowledge and key skills.
- The curriculum content sections of the subject plans are topic-focused. It is important to also plan for student learning outcomes that reflect all aspects of syllabus requirements and this is recommended in developing the subject plans.
- The subject plans could incorporate the literacy, numeracy and self-evaluation practices being developed.

The draft findings and recommendations arising out of this evaluation were discussed with the principal, deputy principal and subject teachers at the conclusion of the evaluation. The board of management was given an opportunity to comment in writing on the findings and recommendations of the report; a response was not received from the board.