

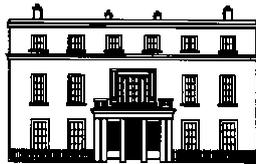
An Roinn Oideachais agus Scileanna

Department of Education and Skills

**Subject Inspection of Science and Physics and
Chemistry (combined course)
REPORT**

**Saint Mary's Secondary School
Ballina, County Mayo
Roll number: 64520M**

Date of inspection: 9 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 AND PHYSICS AND
CHEMISTRY (COMBINED COURSE)

INFORMATION ON THE INSPECTION

Dates of inspection	9 and 10 April 2014
Inspection activities undertaken <ul style="list-style-type: none">• Review of relevant documents• Discussion with principal and teachers• Interaction with students	<ul style="list-style-type: none">• Observation of teaching and learning during eleven class periods• Examination of students' work• Feedback to principal and teachers

MAIN FINDINGS

- The quality of teaching and learning was good or very good with some exemplary practices observed.
- Teachers had prepared very well for their lessons with a variety of methodologies utilised including the effective use of information and communication technology (ICT).
- Very good student-teacher rapport was evident in all lessons and homework is being monitored and corrected with some evidence of written formative feedback seen in samples of students' work.
- Science is an optional subject after first year and the uptake of Physics and Chemistry (combined) is good.
- The school has three well-resourced science laboratories, though one of these laboratories is not sufficiently functional and this impacts on its potential to support students' active learning.
- The department's planning is good and it includes good record-keeping as well as an analysis of certificate examination results.

MAIN RECOMMENDATIONS

- Teachers should encourage students to use the lesson's learning outcomes to self-reflect on their own learning.
- The science department should agree and adopt a strategy of providing written formative feedback to students on their practical work.
- Management should address the lack of sufficient access to gas and water that exists in one of the school's laboratories.
- The department's schemes of work should be extended to include specific teaching and learning methodologies, time frames for topics and a teacher review section to improve their use as working documents.

INTRODUCTION

St Mary's Secondary School is an all-girls voluntary secondary school located in Ballina and operating under the trusteeship of CEIST – *Catholic Education an Irish Schools' Trust*. It had, at the time of the inspection, an enrolment of 591 students. In addition to the Junior Certificate and Established Leaving Certificate, the school offers an optional Transition Year programme (TY), the Leaving Certificate Vocational Programme (LCVP) and the Leaving Certificate Applied (LCA) programme.

TEACHING AND LEARNING

- The quality of teaching and learning was good or very good overall with some exemplary practices observed. Where teaching was at its best, the lessons focussed on teaching for understanding using an investigative approach to Science, the lesson material was dealt with in a very thorough manner and an appropriate balance was struck between teacher input and student-centred activities.
- All lessons were very well prepared. All teachers recapitulated prior learning at the start and in some lessons, where new topics were introduced to students, the good practice of ascertaining students' prior understanding of the new material was explored. Overall, the pace and structure of the lessons observed was very good.
- The expected learning outcomes were shared with students at the start, recorded and kept visible throughout most lessons. The science department should encourage students to use these outcomes to self-assess their knowledge and understanding of topics, with a view to identifying gaps and providing direction for their own learning.
- A variety of methodologies, including good use of ICT, was used. In addition, some differentiation strategies were evident throughout the lessons. These focused mainly on providing students with individual attention when needed and where students were organised into groups of mixed ability.
- Classroom management was excellent and a very good student-teacher rapport was evident in all lessons. Classroom atmosphere was conducive to learning; students were engaged and challenged during lessons and they were affirmed for their contributions.
- Questioning was used by teachers in all lessons to ascertain student learning. Questioning was best when it was directed and students were given time to formulate a response. There was good use of higher-order questions in some lessons. As such questions support enquiry-based learning, teachers should use them as often as possible.
- Homework was assigned and monitored in all lessons. Some formative feedback was seen in samples of students' examination and practical work. It is recommended that the science teachers agree and adopt a strategy of providing written formative feedback to students. This should apply in particular to their written practical work.
- Keywords were explained and in some junior cycle biology-focused lessons students were encouraged to pronounce these words correctly. The Physics and Chemistry (combined) students made strong numeracy links with Mathematics to ensure consistent use of mathematical terminology and techniques. In a small number of cases, in order to improve oracy, teachers were advised that students would have benefited from answering questions aloud.

SUBJECT PROVISION AND WHOLE SCHOOL SUPPORT

- While Science is not a core subject, all students study it in first year and the number of students who continue with Science to third year is good. Science is compulsory in the optional TY programme and students are offered taster modules of Agricultural Science, Applied Mathematics, Biology, Chemistry and Physics thereby enabling them to make informed decisions on subject choice for Leaving Certificate. The uptake of leaving certificate Physics in recent years has not been sufficient to provide a class to students. However, the number of students opting for the Physics and Chemistry (combined) course is good.
- Time allocation for first-year Science is below the recommended level. Currently, only one double period is offered to TY Science students. Management should try to improve the allocations to these two year groups as soon as resources allow it. The time allocation for Physics and Chemistry (combined) is within curriculum guidelines.
- The school has three science laboratories to which students have good access for their science lessons. One laboratory however, does not have sufficient access to gas and water and, as a result, the ability of students to engage in practical work in this laboratory is very restricted. Management should address this issue urgently as it is impacting on the subject department's capacity to support practical work in Science.
- The science department ensures that the laboratories are adequately stocked with resources, though in some rooms, blinds are needed to ensure that students can view the material presented on the data projector or whiteboards clearly. All laboratories have appropriate safety equipment and chemicals are stored correctly.
- Common assessments are held for all year groups in the subjects. When reporting to parents at junior cycle, the overall result for each student includes a percentage, up to a maximum of ten percent, for her attainment in practical work during the term.

PLANNING AND PREPARATION

- The science teachers work well as a team. It is recommended that a co-ordinator be appointed and this role be rotated amongst the team periodically. Formal meetings are held regularly and records of these meetings are good. These records should be communicated to management so that any actions arising can be addressed more efficiently.
 - The department undertakes an analysis of certificate examination results and compares these with national averages every year. This good practice should be used to enhance future planning.
 - Collaborative schemes of work are in place, but these should be extended to include specific teaching and learning methodologies linked to the expected learning outcomes, time frames for topics and a review section for teachers to enable self-evaluation of approaches outlined in these working documents.
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The draft findings and recommendations arising out of this evaluation were discussed with the 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.

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