

**An Roinn Oideachais agus Scileanna**

**Department of Education and Skills**

**Subject Inspection of Science and Physics  
REPORT**

**Coláiste Muire,  
Ennis, County Clare  
Roll number: 61930Q**

**Date of inspection: 9 March 2016**



**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**

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**INFORMATION ON THE INSPECTION**

<b>Dates of inspection</b>	8 and 9 March 2016
<b>Inspection activities undertaken</b> <ul style="list-style-type: none"><li>• Review of relevant documents</li><li>• Discussion with principal and teachers</li><li>• Interaction with students</li></ul>	<ul style="list-style-type: none"><li>• Observation of teaching and learning during ten class periods</li><li>• Examination of students' work</li><li>• Feedback to principal and teachers</li></ul>

**MAIN FINDINGS**

- The quality of learning and teaching in all lessons was good or very good with exemplary uses of an investigative approach to teaching Science and Physics in most lessons.
- Teachers, with the assistance of a laboratory technician, were very well prepared for their lessons and the good practices of enquiry-based learning and student use of information and communications technology (ICT), were observed in almost all lessons.
- Homework is assigned regularly and evidence of written formative feedback was seen in samples of students' work.
- Science is a core subject in the junior cycle and Physics is one of four science subjects offered at senior cycle.
- The school has five science laboratories and students have good access to these rooms for science lessons through collaboration between management and the science teachers.
- The science department planning is good overall and common schemes of work which are very detailed have been devised.

**MAIN RECOMMENDATIONS**

- The science department should consider, through collaboration, the practice of peer observation to further enhance the sharing of good practices that have already been established.
- There was evidence that some class groups are assigned a wide variety of homework types and this practice should be adopted by all teachers so that students regularly experience a variety of different types of homework in addition to written tasks.
- The analysis of certificate examination results should be extended to include measurable targets and time-bound action plans in order to further improve student learning.

## **INTRODUCTION**

Coláiste Muire is a voluntary secondary school for girls under the trusteeship of Catholic Education an Irish Schools Trust (CEIST). At the time of the inspection it had an enrolment of 901 girls. The school provides the Junior Certificate and the established Leaving Certificate in addition to an optional Transition Year (TY) programme, Leaving Certificate Vocational Programme, and the Leaving Certificate Applied.

## **TEACHING AND LEARNING**

- The quality of teaching and learning in Science and Physics was good or very good in all lessons. There were exemplary uses of an investigative approach to teaching Science and Physics in most lessons. The Science department should consider implementing the practice of peer observation to further enhance the sharing and promoting of good teaching methodologies and practices that have already been established.
- Teachers were very well prepared for their lessons and benefited from the assistance of a laboratory technician. Learning intentions were shared and recapitulated in most lessons. In some lessons students were encouraged to use these intentions to reflect on their own learning. The good practices of sharing, recapitulation, and student reflection on learning intentions should be used by all teachers in the science department.
- A good range of effective teaching and learning methodologies was observed in lessons. These included recapitulation of prior learning, clear teacher instruction, experimental work, individual student tasks, group and pair work, teacher and student demonstrations, interactive ICT applications, and note-making. Lessons used these methodologies in order to engage students in their learning. The practice of note-taking should be minimised or avoided in favour of note-making. Where group work takes place the number of students in the groups should be kept to a minimum and students should be assigned roles.
- Classroom management was very good and student behaviour was exemplary. A very positive student-teacher rapport was evident throughout all lessons. The laboratories had a good variety of student work, models, charts and posters on display.
- Teachers employed good differentiation strategies throughout lessons. The good practice of using differentiated learning intentions was observed in a small number of lessons and this practice could be adopted by all teachers.
- Questioning was used by teachers in all lessons to ascertain students' learning. Show-me boards were also used in some lessons to very good effect to check on students' learning. Questioning was best when it was distributed across the student cohort and the number of students providing answers was maximised. Greater use of the show-me boards is one strategy that might assist all teachers in this regard.
- Homework is assigned and corrected regularly. Students were provided with oral and written formative feedback. It is suggested that written formative feedback be provided consistently to students in their practical copybooks. While some class groups are assigned a wide variety of homework types this practice should be adopted by all teachers so that students regularly experience a variety of different types of homework.
- Literacy and numeracy strategies were observed in lessons throughout the inspection. Difficult words were explained and an importance was placed on units in some lessons. In a small number of cases students' responses could have been improved by being encouraged to project their voices.

## **SUBJECT PROVISION AND WHOLE SCHOOL SUPPORT**

- Whole-school support for the sciences is very good. Science is a core subject in junior cycle and is compulsory in TY. Students are offered an open choice of four available science subjects at senior cycle. The uptake of Physics is broadly in line with national averages. The current strategies for increasing the uptake of Physics should be reviewed.
- Junior Certificate science classes are of mixed ability and time provision is in line with syllabus guidelines. Time provision for TY and senior cycle Physics fully meets the syllabus requirements.
- The school has five well-resourced science laboratories to which students have good access for practical work. As a result of collaboration amongst the science teachers and senior management, most science lessons occur in these laboratories. Management also provides the science department with a laboratory technician who assists the teachers in preparing lessons and stock control. All laboratories have appropriate safety equipment and chemicals are stored correctly. The school has an up-to-date health and safety policy and risk assessments are undertaken annually.
- The school is supportive of teachers' continuing professional development and two teachers are actively involved in the Teaching Enquiry with Mysteries Incorporated (TEMI) programme in the University of Limerick. Students are also encouraged to participate in extra-curricular events such as science week and the ECO-UNESCO environmental awards.
- Common assessments occur at Christmas and summer. The science department provides a percentage score for students' attainment in practical work during the year as part of this process and this practice is commendable.

## **PLANNING AND PREPARATION**

- The quality of planning and preparation is good. The teachers meet regularly and good minutes of these meetings are maintained. It is suggested that the co-ordinator role could be placed outside the post structure and rotated periodically amongst the teachers so that all members of the department gain experience in this regard.
  - Very good schemes of work are in place for Science and Physics. All schemes should be extended to include a teacher review section in order to increase their effectiveness as working documents for informing future planning.
  - The science department conducts an analysis of certificate examination results. This analysis should be extended to setting measurable targets and agreeing time-bound action plans in order to improve upon student learning, and the extended analysis should be discussed at department meetings.
  - The TY schemes of work should be written in the same manner as Science and Physics. In this regard, there should be less Leaving Certificate content covered in the TY programme. In order to promote the uptake of Physics there should be a better balance of the three sciences taught in first and second year than is currently the case.
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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 of the school was given an opportunity to comment in writing on the findings and recommendations of the report, and the response of the board will be found in the appendix of this report.

# **Appendix**

**SCHOOL RESPONSE TO THE REPORT**

**Submitted by the Board of Management**

**Part A Observations on the content of the inspection report**

**Part B Follow-up actions planned or undertaken since the completion of the inspection activity to implement the findings and recommendations of the inspection.**

The Board accepts the findings and the recommendations of the Report and will work towards Implementing the recommendations.

The Board welcomes the very positive findings of the Science and Physics Inspection.

It commends the inquiry based learning and investigative approach to teaching and learning in Science and Physics.

The Board sees the practice of peer observation through collaboration as a most positive recommendation and will encourage the Department to follow this practice.