An Roinn Oideachais agus Scileanna

Department of Education and Skills

Subject Inspection in Science

REPORT

School name	Coláiste Cholmáin
School address	Claremorris Co Mayo
Roll number	64610N

Date of Inspection: 03 April 2017

AN ROINN OIDEACHAIS AGUS SCILEANNA | DEPARTMENT OF EDUCATION AND SKILLS

WHAT IS A SUBJECT INSPECTION?

Subject Inspections report on the quality of work in individual curriculum areas within a school. They affirm good practice and make recommendations, where appropriate, to aid the further development of the subject in the school.

HOW TO READ THIS REPORT

During this inspection, the inspector evaluated learning and teaching in Science under the following headings:

1. Learning, teaching and assessment
2. Subject provision and whole-school support
3. Planning and preparation

Inspectors describe the quality of each of these areas using the Inspectorate's quality continuum which is shown on the final page of this report. The quality continuum provides examples of the language used by inspectors when evaluating and describing the quality of the school's provision in each area.

Subject Inspection

INSPECTION ACTIVITIES DURING THIS INSPECTION

Date of inspection	03 April 2017
Inspection activities undertaken • Review of relevant documents • Discussion with principal and key staff • Interaction with students	• Observation of teaching and learning during three class periods • Examination of students' work • Feedback to principal and relevant staff

SCHOOL CONTEXT

Coláiste Cholmáin is a voluntary secondary school for boys. The school had an enrolment of 410 students at the time of the evaluation. The school operates under the trusteeship of the Archdiocese of Tuam. The school offers students an optional transition year (TY) programme, the Leaving Certificate Applied programme and the Leaving Certificate Vocational Programme in addition to the Junior Certificate and established Leaving Certificate.

SUMMARY OF MAIN FINDINGS AND RECOMMENDATIONS:

FINDINGS

- The quality of teaching ranged from good to very good in the lessons observed.
- Teachers were well prepared for their lessons and used a good range of relevant resources and effective methodologies, including some use of enquiry-based learning.
- The quality of learning was good or very good and students were active and engaged in all lessons.
- Whole-school support for the sciences is good; Science is a core subject at junior cycle and four science subjects are offered to students at senior cycle.
- The students of science subjects have very good access to the three available laboratories for practical work.
- The science department's planning is good overall, though there is a need for greater consistency in the detail available in the schemes of work.
- At the time of the evaluation, there was little evidence that the science department had engaged with planning for the new junior cycle specification for Science.

RECOMMENDATIONS

- The science teachers should increase the emphasis on scientific skills and enquiry-based learning in the range of methodologies used.
- The school's health and safety policy should be ratified and reviewed annually by the board of management.
- All schemes of work should include timeframes for topics, a teacher review section and specific teaching and learning methodologies and assessment modes linked to the learning intentions.
- Teachers should familiarise themselves with the new junior cycle science specification and work collaboratively to prepare a plan based on the strands and learning outcomes of the new specification

DETAILED FINDINGS AND RECOMMENDATIONS

1. TEACHING, LEARNING AND ASSESSMENT

- During the evaluation, the quality of the teaching observed ranged from good to very good.
- Lessons were well prepared and teachers had access to a good range of equipment and resources including information and communications technology (ICT). The learning intentions of the lessons were generally clear and they were shared with students where possible. Teachers should use the learning intentions to check on learning during lessons as well as summarising the main points at the end of lessons.
- Teachers used a good range of effective methodologies in lessons. They provided clear instruction to students and ensured that students were engaged in lessons with active methodologies such as individual student tasks, group and pair work, and investigative coursework. When teacher demonstrations are used, it is recommended that students be more involved with this process where possible. While there was some use of enquiry-based learning the science teachers should focus more on investigation and enquiry learning in lessons. All the lessons observed had a good balance between the time spent on teacher instruction and student activity.
- Classroom management was very good. There was a very positive student-teacher rapport during the lessons. Students were affirmed for their efforts and they demonstrated high levels of interest and participation in learning. Students were confidently discussing their opinions and asking questions in the safe classroom environment that had been established.
- Science classes are of mixed ability and good differentiation practices were used by teachers. Students were motivated and engaged during activities and teachers provided assistance to individuals where needed when activities were ongoing. The tasks set were also suitably differentiated so that students of all abilities were challenged.
- The quality of assessment was good. Good practices included the use of differentiated questions, distributing the questions across the student cohort, and giving students sufficient time to provide an answer. In some cases chorus responses were overused in questioning and teachers should be mindful of minimising this practice.
- Homework is assigned, monitored and corrected frequently. Teachers were providing good oral formative feedback to students in lessons and samples of students' work showed that written formative feedback was a regular feature in guiding students towards improvement. In a number of cases, students were transcribing their practical work from a template. It is preferable that students be encouraged to write up their practical work in their own words because it helps to develop their scientific reporting skills.
- Students' literacy and numeracy needs were addressed in a variety of ways during the lessons. Identifying key terminology and the correction of the spelling of these terms was stressed with students. A strong emphasis was placed on the importance of units in calculations and the labelling of diagrams. Student oracy was generally good and most students projected their voice when speaking in class. The science department should review the effectiveness of any whole-school strategies of literacy and numeracy that they use as part of the school self-evaluation process.

2. SUBJECT PROVISION AND WHOLE SCHOOL SUPPORT

- Whole-school support for the sciences is good. Science is a core subject in the school and students can choose from Agricultural Science, Biology, Chemistry and Physics at senior cycle.
- The time allocation for Science is in line with syllabus and specification guidelines.
- The school has three laboratories which are well resourced. Almost all the science lessons at junior cycle and senior cycle occur in these laboratories. ICT facilities are good and the laboratories have appropriate first-aid facilities and safety equipment, and chemicals are stored correctly. While the school has a health and safety policy, it is in need of updating. The health and safety policy, including risk assessment documentation, should be ratified and reviewed annually by the board of management.
- The school is supportive of teachers' continuing professional development. Extra-curricular activities in science are provided for students in a number of ways. These include participation in SciFest and the BT Young Scientist and Technology Competition. Scientific posters are developed for Green Flag awards and students were recently involved in air pollution projects.
- Common assessments take place at Christmas and summer. The science department should consider including in students' overall results in these examinations a percentage for their attainment in practical work during the term.

3. PLANNING AND PREPARATION

- Overall the planning and preparation for Science is good. The science teachers appoint a coordinator to assist in the operation of the department. Formal meetings are held frequently and minutes of these meetings are forwarded to senior management.
- Teachers work effectively with each other to support their students' learning. At the time of the evaluation a science teacher was absent due to illness. The school reported difficulties in hiring substitutes in their place. However in the interim, the remaining science teachers took on additional lessons for the students of their absent colleague, particularly third-year students, whose coursework was in need of completion. This spirit of collaboration is commendable.
- The analysis of certificate examination results undertaken by the science teachers should be used to set targets and action plans for improvement. The targets and action plans should be recorded in department minutes.
- At the time of the evaluation, science teachers had not availed of the continuing professional development (CPD) training to support the introduction of the new specification for junior cycle Science and there was little evidence that the science department had engaged with planning for the new junior cycle specification. The reason for this was reported to be industrial action. In order that each student will benefit from the full range of learning experiences as provided for in the specification, it is recommended that teachers familiarise themselves with the new science specification and work collaboratively with their colleagues to prepare a plan based on the strands and learning outcomes of the new specification.
- While schemes of work are in place there is a need for greater consistency in the detail available in these documents. All schemes should include timeframes for topics, a teacher review section and specific teaching and learning methodologies and assessment modes linked to the learning intentions.

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 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

The Board would like to clarify that the continuing Industrial Action between the ASTI and the Government was in fact the SOLE reason that Science teachers had not availed of the Continuing Professional development (CPD) training to support the introduction of the new specification for junior cycle Science and had not engaged with planning for the new junior cycle as stated at bullet point 7 of the "Summary Findings", bullet point 4 of "Summary Recommendations" and again at bullet point 4 of "Planning and Preparation". Whilst this situation was regrettable it was beyond the powers of the Board of Management to resolve.

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

On the settlement of the current Industrial Dispute Management and Science teachers will ensure that full engagement, familiarisation and planning for the new Junior Cycle Specification will take place.

THE INSPECTORATE'S QUALITY CONTINUUM

Inspectors describe the quality of provision in the school using the Inspectorate's quality continuum which is shown below. The quality continuum provides examples of the language used by inspectors when evaluating and describing the quality the school's provision of each area.

Level	Description	Example of descriptive terms
Very Good	***Very good*** applies where the quality of the areas evaluated is of a very high standard. The very few areas for improvement that exist do not significantly impact on the overall quality of provision. For some schools in this category the quality of what is evaluated is ***outstanding*** and provides an example for other schools of exceptionally high standards of provision.	Very good; of a very high quality; very effective practice; highly commendable; very successful; few areas for improvement; notable; of a very high standard. Excellent; outstanding; exceptionally high standard, with very significant strengths; exemplary
Good	***Good*** applies where the strengths in the areas evaluated clearly outweigh the areas in need of improvement. The areas requiring improvement impact on the quality of pupils' learning. The school needs to build on its strengths and take action to address the areas identified as requiring improvement in order to achieve a *very good* standard.	Good; good quality; valuable; effective practice; competent; useful; commendable; good standard; some areas for improvement
Satisfactory	***Satisfactory*** applies where the quality of provision is adequate. The strengths in what is being evaluated just outweigh the shortcomings. While the shortcomings do not have a significant negative impact they constrain the quality of the learning experiences and should be addressed in order to achieve a better standard.	Satisfactory; adequate; appropriate provision although some possibilities for improvement exist; acceptable level of quality; improvement needed in some areas
Fair	***Fair*** applies where, although there are some strengths in the areas evaluated, deficiencies or shortcomings that outweigh those strengths also exist. The school will have to address certain deficiencies without delay in order to ensure that provision is satisfactory or better.	Fair; evident weaknesses that are impacting on pupils' learning; less than satisfactory; experiencing difficulty; must improve in specified areas; action required to improve
Weak	***Weak*** applies where there are serious deficiencies in the areas evaluated. Immediate and coordinated whole-school action is required to address the areas of concern. In some cases, the intervention of other agencies may be required to support improvements.	Weak; unsatisfactory; insufficient; ineffective; poor; requiring significant change, development or improvement; experiencing significant difficulties;