

**An Roinn Oideachais agus Scileanna
Department of Education and Skills**

Subject Inspection in Science & Physics

REPORT

Ainm na scoile / School name	Davitt College
Seoladh na scoile / School address	Springfield Castlebar
Uimhir rolla / Roll number	76060U

Date of Inspection: 13-March-2018



An Roinn Oideachais
agus Scileanna
Department of
Education and Skills

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 & Physics under the following headings:

1. Teaching, learning 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.

CHILD PROTECTION

During the inspection visit, the following checks in relation to the school's child protection procedures were conducted:

1. The name of the DLP and the Child Safeguarding Statement are prominently displayed near the main entrance to the school.
2. The Child Safeguarding Statement has been ratified by the board and includes an annual review and a risk assessment.
3. All teachers visited reported that they have read the Child Safeguarding Statement and that they are aware of their responsibilities as mandated persons.

The school met the requirements in relation to each of the checks above.

SUBJECT INSPECTION

INSPECTION ACTIVITIES

Dates of inspection	12 & 13 March 2018
Inspection activities undertaken <ul style="list-style-type: none">• Review of relevant documents• Discussion with principal and key staff• Interaction with students	<ul style="list-style-type: none">• Observation of teaching and learning during nine class periods• Examination of students' work• Feedback to principal and relevant staff

School context

Davitt College is a co-educational post-primary school in Castlebar and it currently has an enrolment of 672 students. It operates under the auspices of the Mayo, Sligo and Leitrim Education and Training Board. The school participates in the Delivering Equality of Opportunity in Schools (DEIS) initiative. In addition to the junior cycle and established Leaving Certificate, the school offers the Junior Certificate School Programme, the Leaving Certificate Vocational Programme, an optional Transition Year (TY) programme and the Leaving Certificate Applied programme as part of the school's educational curriculum.

SUMMARY OF MAIN FINDINGS AND RECOMMENDATIONS:

Findings

- The quality of teaching in Science and Physics was good overall, with very good practices observed in some lessons.
- Teachers of Science have begun to meaningfully engage with the new Science specification by trialling different techniques that allow for enquiry-based methodologies.
- The quality of student learning was good and most lessons had good levels of student activity and engagement, though in some cases there was a need for teachers to choose methodologies that were more student-centred.
- Subject provision and whole-school support for the sciences is good; Science is a core subject, the number of students studying Physics at senior cycle is good; however, the school's health and safety policy is currently outdated.
- The school has three well-resourced science laboratories and two demonstration rooms, though the demonstration rooms are limited in terms of their usefulness for active learning methodologies.
- The science department's planning is good, though there is scope for further developing the schemes of work and the analysis of state certificate examination results.

Recommendations

- The teachers should further develop the enquiry-based methodologies that they have been using and should use continuing professional development (CPD) to ensure they follow best practice in relation to any of the methodologies that they undertake.
- The over-reliance on presentation software observed in a number of lessons, which led to periods of student inactivity, should be avoided in favour of active learning during class time.
- The board and senior management should pursue the development of additional laboratory facilities given the high level of curriculum provision in the sciences.
- The school's health and safety policy, including risk assessments are out of date and need to be reviewed, updated and ratified.

DETAILED FINDINGS AND RECOMMENDATIONS

1. TEACHING, LEARNING, AND ASSESSMENT

- The quality of teaching during the evaluation was good overall with very good practices observed in some lessons. Teachers have received CPD for the new Science specification and it was evident that they had started to meaningfully engage with different practices and methodologies to support enquiry-based learning.
- Lessons were well prepared and teachers made the learning intentions of their lesson clear to students. All teachers should check, as the lesson progresses, to see if the intended learning is taking place by referring to the learning intentions. This assessment for learning (AfL) practice will assist teachers in gauging the pace required for each class group. Students should be encouraged to use the learning intentions to reflect on their own learning.
- A good range of methodologies was used by teachers during lessons. The science teachers were trialling different methodologies for the new Science specification, which were centred primarily on enquiry-based learning and critical thinking. In a number of instances better structures in areas such as timeframes, group sizes, effectiveness of the task, and ways in which feedback was sought were needed. Further development of these enquiry-based methodologies and familiarisation of best practice around the application of these methodologies should be sought through CPD.
- The quality of learning was good. Students were generally engaged in their learning and in some cases contributed very well in discussions and through research tasks. There was a good balance between the time spent on teacher instruction and student activity in most lessons, though in some cases an over-reliance on presentation software led to less enquiry-based learning and unnecessary periods of student inactivity. Teachers, in the last few years, started the practice of sharing notes and resources with students using an online platform and they should extend this practice. This would provide more time in lessons for active learning.
- Classroom management was very good and teacher-student interactions were very positive. The laboratories and demonstration rooms had suitable scientific charts, posters and samples of students' work on display. These conditions led to a learning environment that was conducive to learning and generally motivated students to progress and engage in lessons. Lessons were usually differentiated well, though in a small number of cases more able students could have been provided with extension exercises in order to challenge them.
- The quality of assessment was good. Questioning strategies were very good overall; however teachers should avoid occasions where chorus responses are allowed to dominate and instead they should use a variety of AfL techniques to gauge the level of learning taking place across the cohort of students. Higher-order questions were regularly used to engage the students in critically analysing the problems presented to them.
- Homework was assigned and corrected and students were provided with good levels of formative feedback on their work. Students should be discouraged from transcribing practical work from a template as this practice does not assist them in developing their scientific report-writing skills. The science department should consider providing a percentage score for students' attainment in substantial pieces of work such as projects or practical work during the year.
- Good literacy and numeracy strategies were observed during lessons. Difficult terminology was explained and an importance was placed on units when they were required. Students generally showed good oracy skills throughout the evaluation.

2. SUBJECT PROVISION AND WHOLE SCHOOL SUPPORT

- Subject provision and whole-school support for the sciences is good. Science is a core subject and classes are of mixed ability. Physics is one of four science subjects available for students to study at senior cycle and the uptake of Physics is good. TY students get to sample all of the senior cycle science subjects throughout the year.
- The time allocation for Science and Physics is in line with specification and syllabus guidelines. However first-year students do not have a double period for practical work, and the physics students, due to having one single and two double periods, only have three days of contact with the subject during the week. The senior management should review these timetabling issues, with a view to addressing them when resources become available.
- The school has three laboratories and two demonstration rooms as specialist rooms for Science. Most of the science lessons in the school occur in the three laboratories. However, despite the best efforts of management and teacher collaboration, almost a quarter of these lessons occur in the demonstration rooms or general classrooms. The board should seek to pursue the development of additional laboratory facilities in order to allow for more space for practical work and group activities.
- Chemicals are stored appropriately. Health and safety equipment such as first-aid kits and fire extinguishers are available if required. The school's health and safety policy, including risk assessments of rooms and corridors are out of date. The management team should review, update if needed and ratify the policy on an annual basis.
- Teachers give of their time to provide students with a number of extra-curricular activities such as crime scene investigation workshops, the BT Young Scientist and Technology Exhibition, SciFest and an annual science week, where primary school students visit Davitt College and are provided with fun activities in order to promote the sciences. These endeavours are commendable.

3. PLANNING AND PREPARATION

- The quality of planning is good. Two co-ordinators are appointed to the department and these positions are rotated periodically. The duties of the co-ordinators should be agreed and documented. Minutes of meetings showed very good evidence of collaboration amongst the teachers and some discussion of sharing practice and methodologies. The CPD undertaken and use of teachers' professional time is documented in the subject department planning.
- The schemes of work are good and show that the teachers are working on implementing the training received from CPD. Learning intentions are linked in some cases to specific teaching methodologies and assessment modes. The teachers should work to ensure consistency for all the schemes across the year groups. In time they should distil the useful information into a succinct working document that is reflected upon on a regular basis.
- State certificate examination results are analysed annually by the science teachers. Drawing on the context provided in these results, they should be used to set targets and devise strategies for year-on-year improvement. Any targets and strategies decided upon should be discussed at meetings and recorded in minutes.

The draft findings and recommendations arising out of this evaluation were discussed with the principal, deputy principals 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 of Management of Davitt College welcomes the Science Subject Inspection Report and takes note of the recommendations made therein.

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 school's Health & Safety policy has been reviewed, updated and ratified by the Board of Management on April 23rd 2018. A general Risk Assessment is scheduled to take place in the school in May 2018.
- The B.O.M. and Senior Management are exploring the possibility of developing additional laboratory facilities.
- Senior Management has arranged whole-staff C.P.D in differentiation/assessment for learning/assessment of learning/varying teaching methodologies. This CPD will take place in August 2018.

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 of 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 <i>very good</i> 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;