An Roinn Oideachais agus Scileanna

Department of Education and Skills

Subject Inspection of Science and Physics
REPORT

Borrisokane Community College
Borrisokane, County Tipperary
Roll number: 72370P

Date of inspection: 25 November 2013

AN ROINN OIDEACHAIS AGUS SCILEANNA | DEPARTMENT OF EDUCATION AND SKILLS

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

INFORMATION ON THE INSPECTION

Dates of inspection	25 November 2013
Inspection activities undertaken • Review of relevant documents • Discussion with principal and teachers • Interaction with students	• Observation of teaching and learning during seven class periods • Examination of students' work • Feedback to principal and teachers

MAIN FINDINGS

- The quality of learning and teaching of Science and Physics in the lessons observed ranged from good to very good.
- Teachers had prepared very well for the lessons, learning outcomes were shared with students and good use of information and communication technology (ICT) was observed.
- Homework was assigned, monitored and corrected in all lessons and very good written formative feedback was seen in samples of students' work, though this was not as evident in students' practical copybooks.
- Science is a core subject in the junior cycle and Physics is one of a number of science subjects offered at senior cycle.
- Students have very good access to the three science laboratories for their practical work.
- The quality of planning is very high and teachers use self-evaluation techniques to set priority targets for the science department each year.

MAIN RECOMMENDATIONS

- The formative feedback approach used with students' copybooks should be further extended to students' practical copybooks.
- Senior management should consider reviewing the practice of providing two double classes to Physics in senior cycle in order to allow students more regular contact with the subject throughout the week.

INTRODUCTION

Borrisokane Community College is a co-educational post-primary school which operates under the auspices of the Tipperary Education and Training Board (ETB). The school had an enrolment of 538 students at the time of the inspection. The school offers the Junior Certificate, Transition Year (TY), the established Leaving Certificate, the Leaving Certificate Vocational Programme (LCVP), and the Leaving Certificate Applied (LCA) programme to its students.

TEACHING AND LEARNING

- The quality of learning and teaching of Science and Physics in the lessons observed ranged from good to very good. The very good practices of investigative based learning and teaching were observed in all lessons.
- Teachers were very well prepared and this led to a good pace and structure to the lessons. In the practical lessons visited, students gathered their own equipment and cleared up at the end of their tasks. This is good practice.
- Learning outcomes were shared with students and reviewed in all lessons. Good links were made with prior learning, and topics which centred on students' interests were incorporated into lessons
- Teachers used a variety of very effective teaching methodologies including group work, pair work and good use of ICT. A good balance between teacher instruction and student input was maintained in all lessons. Students were also explicitly taught life skills throughout the lessons such as listening skills, making eye contact and various other social interaction skills in order to maximise their engagement with peer work that may be assigned.
- Students were active and engaged in their work and teachers used these activity-based periods to check on learning. Where relevant some students in mixed-ability groups were provided with extra attention when needed in order to differentiate the lesson content. Teachers should be mindful however, to extend these good differentiation strategies to high-achieving students as well.
- Good use of questioning was observed in all lessons. Teachers enabled students to provide answers through directed and higher-order questioning. Mind maps and student-led discussion were also used during lessons.
- Classroom management was of an exceptionally high standard in all lessons and this contributed to a very good student-teacher rapport. Students are affirmed for their efforts and teachers provide good pace and structure to their lessons. There was good emphasis on health and safety during the lessons, laboratories had first aid kits and chemicals were stored appropriately.
- Homework was assigned early in all lessons. Teachers used assessment for learning (AfL) strategies well. Written formative feedback was being provided in homework, practical work and tasks. This good practice should be focussed more on students' practical work as it is an important part of scientific studies. Students are encouraged to self-reflect on their learning and this is highly commendable.
- The school has implemented a keyword strategy for literacy and a units approach for numeracy. The scientific keywords were explained and students had to provide a meaning for them. The science department should be mindful of explaining other non-scientific terms as they arise during lessons.

SUBJECT PROVISION AND WHOLE SCHOOL SUPPORT

- Whole-school support for the sciences is good. Science is a core subject in the junior cycle and students are taught in classes of mixed ability from first year. Five science subjects including Physics are offered as optional subjects for Leaving Certificate. Students study a good range of science modules in the optional TY programme. The numbers of students taking Physics in senior cycle is good and is slightly above the national average.
- Time provision for Science is broadly in line with syllabus recommendations. However, management should keep under review the practice of providing three single class periods in first year until Christmas. Management should also consider replacing one of the two double periods provided in both fifth and sixth year Physics with two single periods to ensure students' contact with the subject is more spread throughout the week.
- The school has three well presented laboratories and a demonstration room. Students have very good access to the laboratories for practical classes and almost all science classes occur within these rooms.
- Management and teachers ensure that the science department is well resourced. ICT facilities in the laboratories are good.
- All the science teachers are active members of the Irish Science Teachers' Association (ISTA). Students are encouraged to take part in extra and co-curricular activities such as the BT Young Scientist and Technology Exhibition and other science related activities.
- The school has an assessment policy and common assessments take place twice yearly. The science department assigns up to ten percent of the grade awarded for practical work undertaken by students throughout the course of the year. This is good practice.

PLANNING AND PREPARATION

- The science teachers work very well as a team and their collaborative planning is very good. Formal meetings are held once each term and records of these meetings are kept on file and emailed to the principal. Teachers also reported that they meet informally on a regular basis.
- Schemes of work are prepared collaboratively and are of a high standard, though there is scope to enhance them by including specific teaching methodologies suitable for each topic with an estimated time frame. It is also recommended that more Physics is taught in first year Science to achieve a better parity between the three sciences.
- The science department sets priority targets at the start of the school year. They try to implement recommendations made from other subject inspections that occurred within the school and have also started trialling classroom observation of their own peers. These practices are highly commendable.
- Teachers regularly self-reflect on their individual plans and analysis of students' results and attainment is undertaken each year. This information is used to inform future planning.

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.

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Appendix

SCHOOL RESPONSE TO THE REPORT

Submitted by the Board of Management

Area 1 Observations on the content of the inspection report

The Board of Management welcomes the Subject Inspection Report of Science and Physics and acknowledges the contribution made by the teachers of Science and Physics at Borrisokane Community College. The Board would particularly like to highlight the high quality of planning that was observed by the inspector. The school is currently promoting active teaching methodologies and are pleased that this was acknowledged by the inspector. The new facilities at Borrisokane Community College with three fully equipped science laboratories and excellent information and communications technology equipment contribute to the learning experience for students.

Area 2 Follow-up actions planned or undertaken since the completion of the inspection activity to implement the findings and recommendations of the inspection

Borrisokane Community College subject departments are continuously updating their subject plans and as recommended in the subject inspection report, are now enhancing their plans with the inclusion of specific teaching methodologies and learning outcomes for each topic. Templates developed by the Professional Development Service for Teaches are used in the formulation of subject plans in a number of subject departments.