An Roinn Oideachais agus Scileanna

Department of Education and Skills

Subject Inspection of Science and Physics
REPORT

Blackwater Community School
Lismore, County Waterford
Roll number: 91509E

Date of inspection: 24 May 2011

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

Date(s) of inspection	23 and 24 May 2011
Inspection activities undertaken • Review of relevant documents • Discussion with principal, deputy principal and teachers • Interaction with students	• Observation of teaching and learning during six class periods • Examination of students' work • Feedback to principal, deputy principal and teachers

MAIN FINDINGS

- All lessons were conducted in a very positive and supportive learning environment where levels of student motivation and challenge were appropriate to each class group although student participation in some lessons required review.
- The development of activity-based learning and affirmation of student effort by the teacher was a key feature of lessons.
- Teaching methods were frequently exemplary as evidenced by the integrated and focused use of information and communication technology (ICT) together with directed questioning to develop students' understanding of concepts and facts.
- The level of planning for Science subjects at junior cycle, senior cycle and in Transition Year (TY) is very good although some development of these plans is necessary.
- Academic student achievement is very good, while assessment for learning (AfL) strategies and assessment of learning practice are effective in ensuring that student learning is progressive and consolidated.

MAIN RECOMMENDATIONS

- Initial student input and participation in some lessons should be enhanced through classroom discussion and by setting advance research tasks as homework exercises.
- School management and the science department should pursue strategies to increase the uptake of Science for Junior Certificate.
- Subject planning should be developed by setting medium-term targets for the development of Science, by linking methodologies, resources to be utilised and assessment strategies to existing schemes of work and by increasing the physics content of TY.
- Teachers should ensure that students take cognisance of annotation of practical notebooks so that corrections are completed.

INTRODUCTION

Blackwater Community School has a current enrolment of 687 students. Science is compulsory in first year and is an optional subject for Junior Certificate. Physics is offered at senior cycle. Various science modules form part of the optional TY programme. The board of management was given an opportunity to comment in writing on the findings and recommendations of the inspection, and the response of the board will be found in the appendix to this report.

TEACHING AND LEARNING

- Lessons generally were well organised and managed. Learning outcomes were shared with students in the majority of lessons and this practice should be extended. Consideration should be given to reducing the quantity of material covered in some lessons so that an appropriate and supportive pace can be maintained throughout.
- Lesson development was exemplary in many cases and appropriate use of teaching aids actively supported student learning. However, initial student input and participation in some lessons should be enhanced through classroom discussion and by setting advance research tasks as homework exercises.
- All lessons were conducted in a very positive and supportive learning environment. Student levels of motivation and challenge were appropriate to each class group. Differentiated approaches ensured that each individual student received appropriate additional support as needed in the development of literacy and numeracy skills.
- Teaching methods were frequently exemplary. There was integrated and focused use of ICT together with directed questioning to develop students' understanding of concepts and facts. There was expert use of ICT in the form of photographs, video and applets to explain key concepts and ideas. This good practice should be extended. Presentations were designed to be paused at appropriate intervals to facilitate teachers to check the extent of student learning. This is very good practice.
- Students' problem solving, analytical and practical skills were developed in Physics through focusing on experimental methods, accuracy and mathematical concepts while revising for Leaving Certificate.
- Students worked effectively in groups during many lessons, however, the appropriate use of group work in some lessons would have supported increased levels of student participation. Practical work and demonstrations were used very effectively and appropriately to reinforce learning and as an effective revision strategy.
- There was effective use of appropriate and challenging questioning in all lessons observed and students responded confidently to questions on their work. Short concise teacher inputs ensured that learning progressed seamlessly was purposeful and supported literacy and numeracy skills.
- Assessment for learning (AfL) strategies and assessment of learning practice were effective in ensuring that student learning was progressive and consolidated. Assessment was integrated into student learning through appropriate questioning and through classroom and homework assignments. Practical notebooks examined were generally of a good standard with effective teacher annotation and comment; however, teachers should ensure that students take cognisance of annotation of practical notebooks so that corrections are completed.
- Academic student achievement is very good. The proportion of students receiving a high grade in Science and Physics and the uptake of higher level in certificate examinations is very good.

SUBJECT PROVISION AND WHOLE SCHOOL SUPPORT

- Science is provided as a mandatory subject in first year only and students are then requested to choose Science from an option band if they wish to study it for Junior Certificate. School management and the science department should pursue strategies to increase the uptake of Science for Junior Certificate to help ensure that students are scientifically literate and to maximise their options for senior cycle.
- Physics, Chemistry, Biology and Agricultural Science are offered at senior cycle and there is a good uptake of each subject. Science modules are mandatory in TY. However, in the interests of balance in the TY science curriculum, it is recommended that the physics content of TY be increased.
- Students are very well supported in making an informed subject choice. They receive expert advice from the school guidance department and subject teachers and through options nights for students and parents and career investigations during TY.
- Students are encouraged to partake in a number of co-curricular and extra-curricular activities including the BT Young Scientists' Competition and the Eco Unesco Environmental Awards. .
- All classes sit formal examinations at Christmas and summer. Third and sixth-year students sit pre-examinations in February. Reports are placed on the school's e-portal system and are sent to parents on four occasions during the year.
- The three science laboratories are very well-maintained and utilised. Access to laboratories is agreed between science teachers. ICT facilities in the science laboratories are very good and science teachers operate the good practice of sharing resources.
- Science teachers are facilitated and encouraged to avail of continuing professional development (CPD) courses as evidenced in school planning documentation. New teachers are very well supported through a good induction programme.

PLANNING AND PREPARATION

- The level of planning for Science subjects at junior and senior cycle and in TY is very good. However, subject planning should be developed by setting medium-term targets for the development of Science, by linking methodologies, resources utilised and assessment strategies to the schemes of work and by reviewing science provision in TY.
- Formal, minuted science department planning meetings are convened and science teachers also meet informally on an ongoing basis to collaborate on many aspects of science provision. The duties of the voluntary role of coordinator of Science are carried out very effectively.
- There was very effective individual teacher planning in evidence in advance of lessons observed. Lesson resources including worksheets, practical and ICT equipment were set up and were ready to use. Teachers maintain good records of students' completion of homework, assessments and attendance.

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.

Published January 2012

Appendix

School response to the report

Submitted by the Board of Management

Area 1: Observations on the content of the inspection report

Thank you for our recent report received. We are satisfied that the report acknowledges all the hard work and wonderful achievements of our Science and Physics departments, respectively.

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

Recommendation 1

As inspection was held at end of May many classes were undergoing revision. Research tasks had been incorporated during project work during the year and we see research as an integral part of the learning process.

Recommendation 2

At Open Nights each science teacher made a presentation on the value of science in the curriculum and further information sessions will be held for the Senior options night.

Recommendation 3

The methodologies and resources to be utilised for each section are currently being added to the subject plans.

Recommendation 2

A physics module for Transition Year is now in place.