

An Roinn Oideachais agus Scileanna

Department of Education and Skills

**Subject Inspection of Physics
REPORT**

**St Kieran's College
College Road, Kilkenny
Roll number: 61560J**

Date of inspection: 31 January 2012



**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 PHYSICS**

INFORMATION ON THE INSPECTION

Date of inspection	31 January 2012
Inspection activities undertaken <ul style="list-style-type: none">• Review of relevant documents• Discussion with principal and teachers• Interaction with students	<ul style="list-style-type: none">• Observation of teaching and learning during four class periods• Examination of students' work• Feedback to principal and teachers

MAIN FINDINGS

- The quality of teaching and student learning was very high.
- Lessons were well structured and managed and there was very good continuity with prior learning.
- Students were challenged appropriately, were encouraged to think deeply about questions, and developed many key skills including good observation skills, problem-solving and critical thinking skills during lessons.
- Innovative use of various methodologies including information and communication technology (ICT) advanced and supported student learning and understanding.
- Lessons were well planned, though some development of overall planning for Physics is necessary.
- Formative assessment strategies had a positive impact on student learning.

MAIN RECOMMENDATIONS

- Laboratories require further maintenance to address issues including storage of chemicals and a faulty fume hood.
 - Subject planning, schemes of work and Transition Year (TY) planning all require review and development.
 - The practice of providing formative written feedback to students should be expanded.
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INTRODUCTION

St Kieran's College is a voluntary secondary school with a current enrolment of 681 students and serves an urban and rural catchment area. Science is offered as a core subject at junior cycle and Physics, Chemistry, Biology and Agricultural Science are options at senior cycle. Science forms part of the compulsory TY programme.

TEACHING AND LEARNING

- The quality of teaching and student learning was very high. Very good links were established with prior learning at the outset of lessons. This approach supported continuity, integration of new material and seamless lesson development. In addition, revision strategies consolidated learning and students' sense of preparedness for examinations.
- Lessons were well structured overall. In most cases lesson objectives were shared with students at the outset, a good practice that should be extended. In some cases, writing lesson objectives on the board would also help to act as a visual reminder for students of the key purpose of the lesson. In addition lessons were appropriately summarised in advance of setting homework assignments.
- Teachers demonstrated a high level of competence, expertise and skill in the management, organisation and delivery of lessons. Teachers had high expectations of students commensurate with their abilities and learning styles.
- Resources, including ICT were used very effectively to enhance learning. The innovative use of interactive applets and appropriate animations supported student understanding and overall learning and contributed to important development of key concepts. Further involvement and interaction with students while this technology was used would have further enhanced learning.
- Short, concise teacher inputs into lessons helped ensure that all students were supported in their class, group and individual learning. Practical demonstrations were appropriately utilised to reinforce learning in some lessons. Student learning was supported through the excellent rapport, very good atmosphere, high expectations and affirmation of student effort evident in all lessons.
- Good focus and attention was placed on subject-specific language. This is praiseworthy as it supports scientific literacy development as outlined in the physics department plan. Scientific literacy and numeracy development were well integrated into each lesson. This worked particularly well when key words were placed on the board and when teachers circulated the classroom providing individual support to students with their assignments.
- There was effective use of appropriate and challenging questioning in all lessons observed. Best practice was demonstrated when questions were directed at individual students. A good depth of knowledge and understanding was demonstrated by students.
- The clear focus on homework assignment and correction was a key assessment feature of all lessons. All modes of assessment supported student learning. Formative assessment is used as a means of encouraging students to reflect on and improve on the quality of their work. The overall quality of students' laboratory notebooks is very good. This is supported in some cases by teachers' positive annotation of students' work and oral feedback to students. This approach should be extended and there should be an increased focus on precautions and experimental errors in some cases.
- Examination results are analysed and academic student achievement is monitored. The proportion of students receiving a high grade in Physics is very good and the uptake of higher level in state examinations is also very good.

SUBJECT PROVISION AND WHOLE SCHOOL SUPPORT

- There is very good provision for science education. Science is a core subject at junior cycle and is mandatory in TY. Physics, Chemistry Biology and Agricultural Science are offered at senior cycle. Students are well supported in making an informed subject choice for senior cycle.
- Time provision for all science subjects is in line with syllabus recommendations.
- The three science laboratories available to the school are located in a building shared with an adjacent school. It is praiseworthy that some issues raised in previous science inspection reports have been addressed including the replacement of faulty plumbing and electrical fittings. However, other important areas still require urgent attention including repair of faulty fume hoods and the storage of chemicals in accordance with Department guidelines and best practice. Ongoing issues regarding responsibility for the maintenance and upgrade of laboratory facilities should be resolved without further delay.
- Access to the laboratories for double periods is prioritised and the laboratory provision meets current demand.
- Students are encouraged to partake in a number of co-curricular and extra-curricular activities including the BT Young Scientists' Competition, Science Week events, and the Trinity College TY Physics Experience.
- Formal examinations take place on four occasions throughout the year and reports are sent to parents following each examination.
- Laboratory ICT facilities are good and include data-projectors, computers and internet access.
- In-service and relevant continuing professional development (CPD) courses are supported for all science teachers. Teachers who are new to Science are well supported by colleagues and school management.

PLANNING AND PREPARATION

- There was good individual teacher planning in evidence in advance of lessons observed. A collaborative physics plan has been developed. The plan, which is reviewed each year, includes a strategy for literacy and numeracy development and is reflective. The future development of the plan should include a section on special needs provision and long-term targets for the development of Physics. This should include monitoring the uptake of the subject in future years and how assessment for learning strategies may further support Physics. The schemes of work should be developed to link each learning outcome to its assessment strategy, resources utilised and teaching methods employed.
- The TY plan for Science includes some key physics topics. It is important that this plan be developed as a subject department plan bearing in mind the template recommended by the Department for writing up the TY programme. The focus should be on skills development with aspects of subject sampling built in.
- Minutes of physics department meetings reveal a collaborative approach to subject planning. Topics discussed include Leaving Certificate results, teaching methodologies and laboratory equipment needs.

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 on the findings and recommendations of the report; the board chose to accept the report without response.

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