An Roinn Oideachais agus Scileanna

Department of Education and Skills

Subject Inspection of Science
REPORT

Coláiste Choilm
Ballincollig, County Cork
Roll number: 71103K

Date of inspection: 25 January 2013

AN ROINN OIDEACHAIS AGUS SCILEANNA | DEPARTMENT OF EDUCATION AND SKILLS

REPORT
ON
THE QUALITY OF LEARNING AND TEACHING IN SCIENCE

INFORMATION ON THE INSPECTION

Dates of inspection	24-25 January 2013
Inspection activities undertaken • Review of relevant documents • Discussions with principal and teachers • Interaction with students	• Observation of teaching and learning during twelve class periods • Examination of students' work • Feedback to principal and teachers

MAIN FINDINGS

- The standard of teaching and learning observed in lessons ranged from high to very high with many examples of excellent practice.
- There was a very good focus on developing students' scientific and general literacy in all lessons observed.
- Students demonstrated a high or very high level of understanding and knowledge of the topic they were learning and their practical skills were well developed.
- A very good level of resources and facilities, and a very high standard of collaborative planning, support the teaching and learning of sciences in all programmes.

MAIN RECOMMENDATIONS

- In some lessons an investigative approach to the practical activity was used very effectively. This should be used to a greater extent.
- To further facilitate correct storage chemicals should be colour coded.

INTRODUCTION

Coláiste Choilm is a co-educational community college in Ballincollig, with a mainstream English-medium school and a Gaelcholáiste. It has an enrolment of 1346 students. Junior Certificate, Transition Year (TY), Leaving Certificate and Leaving Certificate Applied (LCA) programmes are offered. Students may study Science through the medium of Irish in the Gaelcholáiste.

TEACHING AND LEARNING

- The standard of teaching and learning observed in lessons ranged from high to very high with many examples of excellent practice.
- Lessons were well structured and the pace was very good in almost all lessons.
- Many lessons ensured continuity from one lesson to the next by beginning with a review of previous learning. In all lessons, the learning outcomes were shared with the students at the outset, both orally and in writing, and these were revisited at the end of the lesson. This approach is very good.
- Practical lessons were very well organised and students conducted activities safely. The use of whole-class discussion following the practical activity facilitated consolidation and extension of learning.
- Students' previous knowledge was utilised effectively to develop lesson content. In one lesson, brainstorming and student production of a mind map were very effective in ascertaining students' previous knowledge and providing a framework for the planned learning.
- Information and communication technology (ICT) was effectively used to highlight salient points and provide appropriate visual images. Sometimes, a short video clip was effectively used to introduce the topic under consideration.
- Higher-order questions were used to ascertain student learning and develop lesson content and teachers supported students effectively as they developed their answers.
- Active learning opportunities were provided in all lessons, thus enhancing student engagement as they worked collaboratively, in pairs or in small groups. Linking topics with students' everyday experiences helped to make them more interesting.
- In some lessons an investigative approach to the practical activity was used very effectively. This is commended and should be used to a greater extent.
- There was a very good focus on developing students' literacy in all lessons observed. Keywords were written on "keyword board" and students were encouraged to use and explain these terms. Where lessons took place through the medium of Irish, students learned and used the subject-specific terminology in both English and Irish and there was a good focus on spelling.
- Opportunities to enhance students' numeracy, observed in a minority of lessons, should be exploited to a greater extent.
- A very good teacher-student rapport was evident in the lessons visited and the atmosphere was conducive to learning. Students participated very well and were interested and engaged.

- Peer assessment and team work were very effectively used during a revision lesson. This enabled students to make judgements about other teams' answers to questions and facilitated further consolidation of learning as explanations were forthcoming when incorrect answers were given. 'Show me' boards were very successfully used in some lessons to assess students' learning.
- Learning in class was consolidated by written and learning homework. In the copybooks sampled, the standard of students' written work was good or very good. Student progress is monitored through regular tests. Common assessments are appropriately used when possible to ensure standardisation of learning across the year groups. The inclusion of a percentage for students' laboratory copybooks in the overall assessment grade for junior cycle students is very good.
- Students demonstrated a good level of understanding and knowledge of the topic they were learning and their practical skills were well developed.

SUBJECT PROVISION AND WHOLE SCHOOL SUPPORT

- Whole-school support for the sciences is very good. Students are enabled to study sciences in all programmes and uptake of the Leaving Certificate sciences is very good.
- Offering a broad range of science modules to TY students such as Forensics, Zoology and Young Scientist is very good, as it allows students study to aspects of science that are not components of certificate examination syllabuses. In particular the Young Scientist module allows students to further develop their investigative, presentation and analytical skills.
- Timetabling facilitates delivery of the sciences, with almost all classes having an even spread of lessons across the week. Due to timetabling constraints a very small minority of class groups have two teachers for Chemistry. While not ideal, teachers report they have developed strategies to ensure continuity and effective learning experiences for students.
- Subject option bands are appropriately based on student input. Students are well supported when choosing their subjects. The opportunity to sample different subjects in TY allows students to make informed choices for Leaving Certificate.
- The uptake of Science at higher level for Junior Certificate is very high and students perform well in certificate examinations.
- Science facilities are of a very high standard. The school has five very well resourced laboratories, with attached storage and preparation areas and a demonstration room. A very high level of ICT supports teaching and learning. Resources are well organised. The work of the laboratory technician is an important support.
- Chemicals are stored and segregated appropriately. Building on this good practice it is recommended that chemicals be colour coded. A high level of safety equipment is present in the laboratories.
- A safety statement has been devised and is reviewed annually. This is good practice. In future reviews cognisance should be taken of recently devised guidelines.
- Teachers' high level of participation in professional development is applauded. A number of teachers are involved in the 'Discover Sensors' project and one acts as a facilitator.

- Students participate in a very high level of extracurricular and co-curricular activities in the sciences. Teacher and student commitment to participating in competitions such as the Young Scientist and Technology Competition and SciFest is commended, as is the considerable success achieved

PLANNING AND PREPARATION

- A very high standard of departmental planning has resulted in the development of comprehensive science department folders. Programmes of work have been devised for each science subject and for each scientific module taught in TY and LCA. They are written in the form of learning outcomes, linked to assessment strategies and resources required. Timeframes are specified in some instances. This is very good.
- The science department is committed to developing students' literacy. This is evidenced by the development of key word lists and a word bank for Science.
- The science department works in a collaborative manner and evaluates its programmes of work annually, including co-curricular and extracurricular activities undertaken. This is a very good strategy.

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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