Subject Inspection of Science
REPORT

Coláiste an Chraoibhín
Fermoy, County Cork
Roll number: 70990M

Date of inspection: 10 May 2011
REPORT
ON
THE QUALITY OF LEARNING AND TEACHING IN SCIENCE

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INFORMATION ON THE INSPECTION

<table>
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<th>Dates of inspection</th>
<th>9 and 10 May 2011</th>
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| Inspection activities undertaken | • Observation of teaching and learning during seven class periods
| • Review of relevant documents | • Examination of students’ work
| • Discussion with principal and teachers | • Feedback to principal and teachers
| • Interaction with students | |

MAIN FINDINGS

• Effective teaching and learning strategies were observed in lessons.
• Lessons were characterised by very positive teacher-student rapport, good question-and-answer sessions and, in some cases, opportunities for co-operative learning.
• Science is well supported by school management and is included in all programmes.
• Overall, the uptake of the Leaving Certificate sciences is good or very good.
• Collaborative subject planning is good, but there is scope for development.
• The Transition Year programme in the school provides a very good opportunity to students to study aspects of science that are not on the certificate syllabuses.

MAIN RECOMMENDATIONS

• Intended learning outcomes should be shared at the outset and then revisited during the recapitulation stage of the lesson.
• Lessons should include opportunities to enhance students’ literacy and numeracy skills.
• Yearly plans of work should be further developed to provide more detail, in particular relating to learning outcomes and teaching methodologies.

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INTRODUCTION
Coláiste an Chraoibhín is a large co-educational school, operating under the auspices of County Cork Vocational Educational Committee (VEC). It offers all available second-level curricular programmes. Post Leaving Certificate courses are also offered.

TEACHING AND LEARNING

• Lessons were well structured and the pace was generally appropriate. In most lessons learning objectives were shared with the students at the outset. Further development of assessment for learning (AFL) strategies, specifically the use of learning outcomes to structure lessons, is recommended. Learning outcomes should be identified at the outset and revisited during and at the end of lessons as a means of structuring students’ learning.

• Instruction was accurate and was frequently supported by the use of a range of relevant visual stimuli, including information and communication technology (ICT) resources and student demonstration. Emphasis was placed on students’ understanding of content and there were very good examples of linking the lesson content to students’ everyday experiences. In one lesson, brainstorming was used very effectively to introduce a new topic. All of these enhanced teaching and consolidated learning.

• Good question-and-answer sessions were used to review homework, ascertain learning and develop lesson themes in the lessons observed. There was some evidence of the use of higher-order question and teachers supported students as they developed their answers. This is good. On occasion, asking peers to assess students’ answers could be employed as means of encouraging students to reflect and respond further.

• Lessons should include opportunities to enhance students’ literacy and numeracy. In some lessons, flash cards were used effectively to highlight key words. In other lessons there was clear evidence of the development of students’ oral literacy. This is good. Further reinforcement of key terms is recommended through the use of practices such as mind-mapping, matching-column exercises and the review of key words at the end of lessons. Note-making by students rather than note-taking would also help in this regard.

• Classroom atmosphere was pleasant at all times. Lessons were characterised by very positive teacher-student rapport and high levels of student engagement in instances where student activities were interspersed with whole-class discussion and teacher explanation. Structuring theory lessons in this manner is recommended.

• Group work was sometimes but not universally employed. Good opportunities for self-directed learning were identified through practical work and discussion. Increased use of an enquiry-based approach to teaching science and of co-operative learning strategies such as the use of place mat or other such strategies is recommended.

• Appropriate emphasis on revision was observed in some lessons and in one instance there was an appropriate focus on examination technique. Varying of revision strategies is encouraged. One good approach to revision was observed when students presented to their peers, who were then encouraged to ask questions following the presentation.

• Formal assessment procedures are appropriate at classroom, and at whole-school level, as are procedures for communication between school and home. Learning in class was consolidated by written and learning homework in the lessons observed. The standard of students’ written work was good overall and appropriate to their level in the school. Common assessments across year groups facilitate standardisation of learning.
• The science department should monitor the uptake of Science at higher level for Junior Certificate and implement strategies to increase the uptake of Science at this level.

**SUBJECT PROVISION AND WHOLE SCHOOL SUPPORT**

• Science is well supported by school management. It is a core subject in Junior Certificate and Agricultural Science, Biology, Chemistry and Physics are provided as optional subjects in senior cycle. The provision of science in the Leaving Certificate Applied (LCA) programme is good. The inclusion of science in all programmes facilitates the development of scientific literacy among all students.

• Overall, the uptake of the Leaving Certificate sciences is good or very good. The school should explore and implement mechanisms to increase students’ uptake of the Chemistry.

• The timetabled provision for the sciences is appropriate. Classes are of mixed ability with a separate Junior Certificate School Programme (J CSP) group in the second and third year of junior cycle. Subject-option bands for senior cycle are based on a survey of students’ initial choices. This is very good practice and students are appropriately supported when choosing their subjects.

• Students participate in a range of scientific extracurricular activities. The commitment of teachers in providing these stimulating activities is commended.

• The laboratories are well maintained, well organised, visually stimulating and very well resourced. School management has made significant investment in developing the ICT infrastructure in the laboratories and demonstration room.

• The science teachers have benefited from professional development inputs organised by school management. There is evidence of science teachers’ ongoing commitment to skills enhancement. The school encourages membership of the Irish Science Teachers’ Association.

**PLANNING AND PREPARATION**

• Collaborative planning is good in Science and a common programme of work has been developed. Topics are listed on a yearly basis. To further develop this work, it is recommended that intended learning outcomes be included in the common teaching programme. These learning outcomes should be linked to timeframes, teaching and learning methodologies and to the resources to be used. This process should facilitate discussion within the department on effective teaching and learning strategies. The chemistry, biology, physics and agricultural science programmes of work should be similarly further developed. Subject plans should also identify strategies to enhance literacy and numeracy within science lessons.

• The TY programme in the school provides a very good opportunity to students to study aspects of science not on the certificate syllabuses. Many of the themes are linked to everyday life. This is very positive. However, chemistry-based topics should also be included.

• One teacher acts as subject co-ordinator in a voluntary capacity and the work involved facilitates the effective running of the department. Subject meetings are held and records of these meetings are kept that provide an insight into the discussion of the teachers on issues of concern to science. This is positive.
In all lessons, the level of individual teacher planning and organisation was satisfactory or very satisfactory. This included preparation of support materials in advance, planning for access to ICT as needed and the relevance of lesson content to the syllabus. Record keeping was good, attendance was recorded in all lessons and journals were used to record homework.

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 was given an opportunity to comment in writing on the findings and recommendations of the report; a response was not received from the board.

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