An Roinn Oideachais agus Scileanna

Department of Education and Skills

Subject Inspection of Science and Chemistry
REPORT

Loreto College
St. Stephen's Green, Dublin 2.
Roll number: 60820E

Date of inspection: 14 May 2014

AN ROINN OIDEACHAIS AGUS SCILEANNA | DEPARTMENT OF EDUCATION AND SKILLS

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

INFORMATION ON THE INSPECTION

Dates of inspection	13 and 14 May 2014
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 teaching and learning in the lessons observed was of a very high standard overall, with features of exemplary practice evident throughout.
- A very good variety of teaching strategies was used and highly effective integration of assessment for learning (AfL) strategies was evident in all lessons.
- Students were actively engaged in their learning throughout, demonstrated a high level of participation in responding well to teachers' questions and notably, were confident in asking questions.
- There is excellent whole school provision and whole school support for science subjects with Science being a core subject in junior cycle and in the Transition Year (TY) programme.
- An exemplary range of co-curricular and extracurricular activities are provided and students are strongly encouraged and supported to engage in scientific investigations.
- Excellent practice is evident in subject planning which is self-evaluative and reflective and a comprehensive subject plan has been developed collaboratively.

MAIN RECOMMENDATIONS

- The assessment policy should be further developed through the provision of marks for practical work and a common approach to provision of written formative comment.
- To build on the subject department's 'SWOT' analysis, subject planning should be further progressed strategically through the development and implementation of an action plan to address agreed priorities.

INTRODUCTION

Loreto College is a fee-paying voluntary school for girls and has a current enrolment of 572 students. Science is a core subject in junior cycle and in the optional highly-subscribed TY programme. Chemistry, Physics and Biology are optional elective subjects in the school's Leaving Certificate programme.

TEACHING AND LEARNING

- The quality of teaching and learning was of a very high standard overall and features of exemplary practice were evident throughout this evaluation.
- AfL is very well established and very effective integration of most AfL strategies in lessons was evident. Learning outcomes were very clearly established, shared with students, and articulated in terms of what they would know and be able to do by the end of all lesson. Very good consolidation of learning was facilitated throughout together with effective summarisation at the end of lessons.
- A very good variety of teaching methodologies incorporating a focus on investigative activities together with provision for practical work and revision supported and motivated students.
- Lessons were student centred and opportunities were provided for active student-led collaborative work, through either pair or group work. The provision of additional creative opportunities for student-led activities is encouraged, for example, through students drafting questions for quizzes and tests.
- A positive supportive affirming classroom atmosphere was facilitated in every lesson. Very good interpersonal relations and rapport were evident between students and teachers and these were supported through very good oral formative feedback and affirmation of students' work. The learning environment was enhanced through striking displays of students' work and projects.
- Very good classroom management with clear explanations and instructions being given was observed in all lessons. Teachers generated and maintained student interest and enthusiasm in the lesson topics through a lively dynamic pace, good sequencing and a variety of activities.
- Teaching resources including information and communication technology (ICT) were used very effectively and creatively to communicate lesson content.
- Students were actively engaged and demonstrated a high level of participation in responding well to teachers' questions. Notably, students were confident in asking their own questions and in one lesson, in particular, students asked thought provoking questions in relation to the topic being discussed. In the practical lessons observed, students engaged confidently with the tasks and discovery learning was facilitated effectively.
- There was a very good emphasis on the development of students' literacy skills. Students were encouraged to use and become familiar with relevant scientific terminology. This was supported by imaginative print rich displays.
- Questioning strategies were used effectively to assess students' understanding and to develop students' analytical thinking and problem solving skills. Effective differentiation of lesson content was supported by a good balance of lower-order recall type questions and more challenging higher-order questions.

- A clear detailed assessment and homework policy is in place. A good variety and quantity of homework is given, which is monitored and corrected. There was varying practice regarding the provision of formative developmental comment on written work examined during the evaluation. The assessment policy should now be further developed through the provision of marks for practical work. An agreed common approach to provision of written formative developmental comment on significant assignments should be implemented.
- High expectations for students' learning are maintained, and all students are encouraged to take higher-level examination papers.

SUBJECT PROVISION AND WHOLE SCHOOL SUPPORT

- There is excellent whole school provision and support for science subjects in junior and senior cycle. A year-long module on 'World of Science' in TY provides an introduction to Chemistry, Biology and Physics and incorporates a commendable focus on the scientific method. Every student is offered their first choice of elective subjects for the Leaving Certificate with option bands being generated around students' choice.
- Timetabling is very good across all years and all programmes.
- Teachers are actively supported to engage with continuing professional development. Membership of the subject association is facilitated by the school.
- The science subjects are very well resourced with a generous budget being provided. There are four laboratories including a new purpose built laboratory. These are well equipped, are resourced with good ICT facilities and have appropriate health and safety equipment. Appropriate storage and preparation rooms are adjacent to the laboratories.
- A detailed science department health and safety policy is in place as part of the school's health and safety policy and management system which is reviewed regularly.
- An exemplary range of co-curricular and extracurricular activities are provided. Commendably, students are strongly encouraged and supported to engage in scientific investigations and every student in TY is involved in completing a research project which is submitted to a national competition, for example, 'SciFest'.

PLANNING AND PREPARATION

- Excellent practice is evident in subject planning which is being undertaken by a dynamic, collaborative, reflective team of science teachers. A subject co-ordinator is appointed and the role is rotated among the members of the team. The role of the co-ordinator should be further clarified in the subject plan.
- There is very good provision for formal subject meetings. On-going informal meetings and collaboration ensure the efficient co-ordination of science activities. It is recommended that teaching and learning is included as a standing item on the agenda for formal subject department meetings, inter alia, to note the significant sharing of practice which happens informally.
- A comprehensive paperless subject plan has been developed for the science subjects which is maintained electronically. Exemplary common schemes of work have been developed for junior cycle Science. This template could be used to further develop the scheme of work for Chemistry.

- A culture of self-evaluation and reflection is promoted in subject planning. This is evident in the SWOT analysis which is undertaken at the beginning of each school year. To build on this exemplary practice and to further develop a strategic focus, an action plan should be developed and implemented to address agreed priorities. Three skills for development should be identified and prioritised for development for each year group.
- A detailed analysis of student achievement in state examination is undertaken, trends are identified and are interpreted which is very good practice.

The draft findings and recommendations arising out of this evaluation were discussed with the principal, 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 board chose to accept the report without response.

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