Subject Inspection of Science and Biology
REPORT

St. Laurence College
Loughlinstown, Dublin 18
Roll number: 60262T

Date of inspection: 20 October 2011
REPORT ON  
THE QUALITY OF LEARNING AND TEACHING IN SCIENCE AND BIOLOGY

INFORMATION ON THE INSPECTION

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MAIN FINDINGS

• The quality of teaching and learning observed varied considerably with excellence in some instances, effective practice in others and significant weaknesses in others.

• Effective teaching included very good classroom management combined with supportive teacher circulation and the integration of active student learning.

• Whole-school support is generally good but there are weaknesses in aspects of teacher deployment and class formation.

• Subject department planning has enabled co-ordination of curriculum scheduling but work is necessary to embed stated policies in practice and to plan strategically to enhance student outcomes.

MAIN RECOMMENDATIONS

• The investigative approach to Science should be planned for and implemented.

• In some instances, improvement is essential in classroom management, teacher circulation, questioning and raising expectations for all students.

• The science department should devise an action plan and set of strategies to promote the uptake of higher level and raise attainment.

• The school should consider how it provides for student practical work in the sciences for repeat students so that all students complete a full course in the syllabus.

• Management should deploy all teachers on a rotational basis to subjects, programmes and levels in accordance with their qualifications.
INTRODUCTION
St Laurence College provides mainstream second-level education to 369 students and a one-year repeat Leaving Certificate to 95 students. It participates in the Department’s DEIS initiative (Delivering Equality of Opportunity in Schools). An optional transition year (TY) is provided.

TEACHING AND LEARNING
• Lessons began with a review of previous learning, thus ensuring continuity. Teachers outlined the purpose of each lesson clearly and used it to reinforce learning at key points. In some junior cycle lessons, teachers communicated lesson purpose in terms of intended learning outcomes and this provided very good clarity for students.

• In most instances, information and communication technology supported lesson delivery with slides conveying notes, animations and task-based activities completed as the lesson progressed. In a few instances, there was an over-reliance on students copying notes from slides and this should be reconsidered so they are learning more actively. More emphasis on getting students to write notes on their own initiative is suggested, such as through note-building sheets or mind-mapping practices.

• In most instances, teachers circulated purposefully to check and affirm the progress of each student with tasks including corrections.

• A notable strength in some lessons was that learning was clearly linked to real-life contexts. In a few instances, this could have been better applied.

• Many excellent strategies to enhance classroom management were observed. When these were combined with teacher enthusiasm, students were co-operative and engaged in learning. However, in a few instances classroom management was poor. Consideration should be given to sharing effective approaches at department meetings.

• Questioning was mostly used well throughout lessons. Where questioning showed significant strengths, teachers predominantly asked directed questions, resulting in active listening. Good practice was also seen when students were asked to apply their learning and when questioning supported an investigative approach. However, in some lessons there was an overuse of lower-order questioning and a few students were generally unchallenged for entire lessons. This should be addressed and all teachers should have high expectations for all students.

• In junior cycle, good practice was seen when students were involved in planning investigations and discussing their outcomes. However, some activities that should have been investigations had been predetermined in procedure and outcome. The investigative approach to coursework A and B should be planned for and implemented in accordance with the syllabus and Teacher Guidelines.

• The approach taken to student practical work in fifth and sixth year was good and yielded productive learning outcomes.

• Provision for practical work for repeat students varies. Consideration needs to be given to this so that all students complete the full syllabus and are productively engaged in practical phases of lessons.

• Opportunities to extend co-operative learning activities were very well integrated in some lessons through peer assessment and pair work and these yielded productive outcomes.
• Students’ laboratory reports were generally of a good standard. Teachers award marks for these as part of the overall grade and this is beneficial. All students should be guided to write reports in their own words and progressively develop their writing skills through the type of feedback provided.

• In a minority of instances, there was evidence of attention to literacy and numeracy in the feedback given on students’ oral and written contributions and some teachers expected students to accurately use scientific terminology. However, there was little or no evidence of the implementation of the literacy and numeracy strategies listed for that month in the subject plan. This merits serious consideration so that planning informs practice and that DEIS strategies are integrated across the curriculum.

• Assessment practices are generally good with some scope for development. In some classes it was evident that written work is assessed regularly and some teachers provide written formative feedback. To encourage students to realise their own potential for progress, consideration could be given to students redrafting their work in key assessments and to retesting on occasion.

• Recent outcomes for mainstream students in the subjects in the state examinations reveal a very low proportion taking higher level. In order to improve this, the strategy should be to build students’ confidence and expectations from first year onwards. Targets and interventions should be included in the DEIS action plan for examination attainment in the sciences.

**SUBJECT PROVISION AND WHOLE SCHOOL SUPPORT**

• Science is a core subject for junior cycle and TY. This is highly advantageous to students’ education and to the senior sciences. Biology and Chemistry are offered to mainstream senior cycle students annually.

• While the uptake of Biology is consistently high, the uptake of Chemistry fluctuates and it is not provided in some years. Positive steps are taken to promote Chemistry. It should continue to be promoted through a focus on attracting students at ordinary as well as higher level, the extension of interventions early in junior cycle and creative timetabling.

• Agricultural Science, Biology, Physics and Chemistry are provided annually for repeat Leaving Certificate.

• Appropriate timetable allocation is made for the sciences in junior and senior cycle. There are shortcomings in class formation for some junior groups and management reports that it is working toward addressing them in the current year.

• In most instances, the four science teachers are deployed to junior and senior cycle sciences in accordance with their professional qualifications and on a rotational basis. It is crucial that this applies in all instances and that management has essential co-operation and flexibility in this regard when constructing the timetable.

• The laboratories are modern and well maintained with good attention to safety and the proper access to resources. The learning environment in the laboratories is very well enhanced with displays of posters, interesting facts and student projects. Co-curricular activities are promoted and displayed on the science notice board.
PLANNING AND PREPARATION

- Science department meetings have enabled co-ordinated approaches to provision for students. These include organisational arrangements and a range of policies for the sciences including homework and assessment. Further work is necessary to embed some of the policies in practice.

- Common curricular plans for most year groups are differentiated in terms of what students must, should and could be able to do and this is very supportive of mixed-ability teaching. In developing the plans, including TY Science, teaching methodologies and resources should be integrated.

- To enhance student outcomes, the science department should set out a strategic plan for raising examination attainment, develop a policy on the investigative approach and assess the current format of laboratory notebooks.

The draft findings and recommendations arising out of this evaluation were discussed with the principal and subject teachers at the conclusion of the evaluation.

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