

**An Roinn Oideachais agus Scileanna**

**Department of Education and Skills**

**Subject Inspection of Science  
REPORT**

**Nenagh Vocational School  
Nenagh, County Tipperary  
Roll number: 72440K**

**Date of inspection: 14 December 2010**



**AN ROINN | DEPARTMENT  
OIDEACHAIS | OF EDUCATION  
AGUS SCILEANNA | AND SKILLS**

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

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**SUBJECT INSPECTION REPORT**

This report has been written following a subject inspection in Nenagh Vocational School, Co. Tipperary. It presents the findings of an evaluation of the quality of teaching and learning in Science, and makes recommendations for the further development of the teaching of this subject in the school. The evaluation was conducted over one day during which the inspector visited classrooms and observed teaching and learning. The inspector interacted with students and teachers, and examined the students' work. The inspector reviewed school planning documentation and teachers' written preparation. Following the evaluation visit, the inspector provided oral feedback on the outcomes of the evaluation to the principal and subject teachers. 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.

**SUBJECT PROVISION AND WHOLE SCHOOL SUPPORT**

Nenagh Vocational School is a co-educational school under the auspices of North Tipperary Vocational Education Committee. A previous inspection of Science took place in September 2005. The school has worked diligently in the interim period to implement the recommendations arising from the 2005 inspection.

In Nenagh Vocational School, subject provision and whole-school support for the sciences is overall of good quality. At junior cycle, in this school, Science is a core subject, and it is also a core component of the school's Transition Year (TY) programme. Biology and Physics are provided for students at senior cycle. The uptake of science subjects at senior cycle is good. The optional subjects that students may choose at senior cycle are based on the students' choices and this is good practice. The timetabling arrangements for science subjects meet with the recommendations of the syllabus for each subject.

While the existing laboratory facilities are of older construction they are in satisfactory condition and are fully functional as teaching facilities for science subjects. The school reported that it is at the point of commencing work on a building programme that will involve updating the current science facilities and providing a demonstration room and additional equipment and materials for the science facilities. There is good provision of information and communication technology (ICT) equipment for the science subjects. The laboratories appear to be appropriately stocked and there are sufficient resources to enable the delivery of Science as a practical subject.

The science teachers are committed to their professional development and the school provides good support for this. The teachers have been proactive in attending relevant in-service education courses and the school has facilitated their attendance at these courses.

Students are encouraged and facilitated by their teachers to participate in a range of science-related extracurricular activities such as the Young Scientist Exhibition, Science Week and visits to relevant industrial facilities. By participating in such activities the students gain a deeper appreciation of how science is a part of the world around them.

## **PLANNING AND PREPARATION**

The school has appropriate structures in place to support subject planning for Science. Formal meetings occur on a yearly basis while the teachers meet informally throughout the school year. It was evident from discussion with the teachers that they work well together and that they adopt a collaborative approach to subject planning.

A formal subject plan was viewed. It is a well developed document that provides useful information on the delivery of Science and the operation of the science department in the school. The TY plan for Science was also viewed during the inspection. It included an outline of the topics to be studied and revealed that the use of inquiry-based learning is a feature of students' experience of Science during TY. This is good practice because it mirrors the nature of real-life scientific investigation.

In building on the good work already accomplished in subject planning, it is recommended that the science teachers identify the area for change that will have the greatest positive impact on the students' learning and that can be pursued for a half year as part of the subject-planning process. The planning process should involve setting targets to be reached by certain times during the half year. The teachers should agree the steps they will all take to reach the targets. Monitoring how the target is achieved should include formal measures of how the students' learning has improved. At the end of the half-year period there should be a formal review of the success in achieving the targets that were set. The outcomes of this review should be used to inform improvements in the planning and execution of strategies that are goal-focused and targeted on improvements in students' learning.

The preparation for the lessons that were inspected was of a very high quality. The lessons ran smoothly, were focused and well paced, all requisite materials had been prepared in advance, and the teachers demonstrated a high level of subject-matter expertise in the topics they taught.

## **TEACHING AND LEARNING**

Teaching and learning of a high quality were observed during the lessons that were inspected. A range of suitable teaching methods was used to stimulate students' interest, deliver new information, reinforce what the students had learned, and provide opportunities for meaningful engagement by the students with the subject content. In particular, good practice was noted in a range of areas such as where there was an emphasis on ensuring that the students fully understood new scientific terminology. In the main this was addressed by the teacher highlighting key words for the topics. ICT was a notable feature of a number of lessons as it helped the students to clearly visualise the concept being taught. The teachers linked the concepts that they taught to the students' everyday life and this was helpful because it aided the students' understanding.

Where experimental work was undertaken the students worked well together. The work was completed safely and efficiently. The students benefited from a high level of individual support from their teachers, who circulated throughout the room while the students worked.

Classroom management was of a very high standard for every lesson that was inspected. The students and their teachers enjoyed a good rapport. Classroom procedures were clear and effective. Discipline was maintained in a positive, sensitive and supportive manner. Learning activities were engaging for the students and were well managed.

There was a very positive classroom atmosphere during each lesson. The teachers addressed the students by name. The students' ideas and contributions were accepted and affirmed by their teachers. While lessons were focused and purposeful the overall atmosphere was relaxed, well disciplined and conducive to learning.

Observations by the inspector and interaction with the students revealed that they were engaged in their learning in all lessons. They were attentive during their lessons and participated readily in the lesson activities. They showed good levels of interest in Science and they were competent and capable in answering the questions posed by their teachers and by the inspector.

## **ASSESSMENT**

There are appropriate procedures in place in this school to assess students' progress regularly and to report on it to parents periodically. The school uses a satisfactory range of modes of communication with parents and these include formal school reports, parent-teacher meetings, information evenings, and notes in the students' journal.

Samples of the students' work were viewed. These showed that homework is given regularly and corrected by the teachers. The students had completed a good amount of experimental work relative to the time of year and their year group.

Currently, the school undertakes an analysis of the results achieved by students in the certificate examinations. This is good practice because it is supportive of target-setting and monitoring as part of the subject-planning process.

## **SUMMARY OF MAIN FINDINGS AND RECOMMENDATIONS**

The following are the main strengths identified in the evaluation:

- The science staff is professional, dedicated and committed in its work.
- The quality of subject provision and whole-school support for the sciences is good.
- Individual lesson preparation was of a very high quality.
- The quality of teaching and learning was good in all lessons.

As a means of building on these strengths and to address areas for development, the following key recommendation is made:

- It is recommended that the subject-planning process for Science identify and prioritise the area for change that will have greatest possible impact on the students' learning.

Post-evaluation meetings were held at the conclusion of the evaluation when the draft findings and recommendations of the evaluation were presented and discussed with the principal and the subject teachers.