

**An Roinn Oideachais agus Scileanna**

**Department of Education and Skills**

**Subject Inspection of Science and Physics  
REPORT**

**Saint Brigid's Vocational School  
Loughrea, County Galway  
Roll number: 71280J**

**Date of inspection: 21 October 2014**



**A N R O I N N | D E P A R T M E N T O F  
O I D E A C H A I S | E D U C A T I O N  
A G U S S C I L E A N N A | A N D S K I L L S**

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

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**INFORMATION ON THE INSPECTION**

<b>Dates of inspection</b>	20 and 21 October 2014
<b>Inspection activities undertaken</b> <ul style="list-style-type: none"><li>• Review of relevant documents</li><li>• Discussion with principal and teachers</li><li>• Interaction with students</li></ul>	<ul style="list-style-type: none"><li>• Observation of teaching and learning during ten class periods</li><li>• Examination of students' work</li><li>• Feedback to principal and teachers</li></ul>

**MAIN FINDINGS**

- The quality of teaching and learning of Science and Physics was good or very good in almost all the lessons observed.
- Lessons were well prepared and both teachers and students made use of information and communication technology (ICT) such as data projectors, netbooks and tablet devices.
- Classroom management was very good and this allowed for a very positive student-teacher rapport where students were affirmed for their contributions and provided with feedback when relevant.
- Science is a core subject in the junior cycle and Physics is one of a number of science subjects offered at senior cycle.
- The school has access to two well-resourced science laboratories and the building of a new laboratory is due to start shortly which should enable the science department to make optimal use of these rooms for practical lessons.
- The science department plans are good and they include common schemes of work, record keeping and an analysis of certificate examination results.

**MAIN RECOMMENDATIONS**

- All teachers should provide students with learning outcomes during lessons and students should be enabled to use these outcomes in order to self-reflect on their learning.
  - Senior management should provide all junior-cycle year groups with a double period for practical lessons.
  - The science department's schemes of work should be extended to include details in relation to linking learning outcomes with specific teaching and learning methodologies, timeframes per topic and a teacher review section.
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## **INTRODUCTION**

St Brigid's Vocational School is a co-educational post-primary school which operates under the auspices of the Galway and Roscommon Education and Training Board (ETB). The school had an enrolment of 603 students at the time of the inspection. The school offers the Junior Certificate, Transition Year (TY), the established Leaving Certificate, the Leaving Certificate Vocational Programme (LCVP), and a number of Post Leaving Certificate Courses (PLC) to its students.

## **TEACHING AND LEARNING**

- The quality of teaching and learning of Science and Physics was good or very good in almost all the lessons observed. A good variety of learning methodologies was employed throughout lessons. Good use was made of note-making and there was a good balance between teacher instruction and active learning by students. While there was evidence of an investigative approach to teaching of Science in some lessons, this good practice should be incorporated into as many lessons as possible in order to promote discovery learning.
- Lessons were well prepared and teachers recapitulated prior learning and used resources that were in line with student's interests. Good use was made of ICT in lessons and most students had access to either a tablet device or a netbook. These devices however, were used mostly as a replacement for textbooks and teachers should explore greater use of this mode of ICT to further develop discovery learning.
- Learning outcomes were shared with students in one lesson, which enabled them to focus and recapitulate on the topic of the class. This good practice should be implemented by all teachers across the department and students should be provided with training on how to utilise these outcomes in order to self-reflect and improve on their learning.
- Classroom management was very good and this allowed for a very positive student-teacher rapport where students were affirmed for their contributions and provided with feedback when relevant. Where the lessons observed took place in classrooms that were dedicated science rooms or in laboratories, these rooms were print rich with scientific posters and materials. Good use of pair work and group work was observed in lessons although in some cases students would have benefited by being provided with clear time frames and assigned roles within the task.
- Good questioning techniques were used to check students' understanding. Questioning was generally directed and students were given time to formulate a response. Differentiation was evident through prompting and higher order questioning. Teachers used group work to offer students assistance when needed and used probing questions to develop critical thinking.
- Homework was set, monitored and corrected and some evidence of written formative feedback was observed in samples of students' work. The science department should extend the practice of providing written formative feedback to students in practical copybooks. A percentage for students' practical work could be incorporated into their common assessments at Christmas and summer.
- Good aspects of literacy and numeracy were observed throughout lessons. Units were strongly emphasised when they arose and students were being asked to articulate new keywords out loud. To improve on students' oracy all teachers should encourage students to project their voices when answering questions so that their peers can hear what is said.

## **SUBJECT PROVISION AND WHOLE SCHOOL SUPPORT**

- Science is a core subject in the junior cycle and it is also compulsory in the optional TY programme where students are offered a good balance of topics as a taster for senior cycle subjects. Four science subjects, including Physics are offered as options for senior students and the uptake of Physics is slightly above the national average.
- The time allocation for Science and Physics is slightly above syllabus guidelines, however currently there are no double lessons provided in first and second year for practical work. Senior management should provide all junior cycle year groups with a double period for practical lessons in order to allow teachers to further develop discovery learning.
- Timetabling consideration should also be given to spreading the class periods across the week in order to ensure greater class contact time for both Science and Physics and to try where possible to keep the same teacher assigned for the same cohort of students for the three years of Science.
- The school has two well-resourced science laboratories but student access to these laboratories is limited. Teachers work hard to ensure that as many lessons as possible occur within these rooms. Work is due to start shortly on the building of a new laboratory which should enable the science department to make optimal use of these rooms for practical lessons.
- Science is promoted in many ways across the school through activities such as SciFest, the BT Young Scientist exhibition and science quizzes. The school in conjunction with a local pharmaceutical company Chanelle, has set up a scholarship fund for the winner of a student science competition each year. The commitment of teachers in this regard is praiseworthy.

## **PLANNING AND PREPARATION**

- A subject co-ordinator is in place to oversee the work of the science department. Meetings are held monthly and records of these are on file. Certificate examination results are compared with national averages each year. The science teachers should now set measurable targets and agree time-bound action plans in order to improve upon student learning and progress of such action planning should be recorded and monitored in the minutes of meetings.
- Common schemes of work are in place and these should be extended to include details in relation to linking learning outcomes with specific teaching and learning methodologies, timeframes per topic as well as a teacher review section.

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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 in writing on the findings and recommendations of the report, and the response of the board will be found in the appendix of this report.

*Published February 2015*

# **Appendix**

**SCHOOL RESPONSE TO THE REPORT**

**Submitted by the Board of Management**

## **Area 1 Observations on the content of the inspection report**

The Board of Management welcomes the Subject Inspection Report of Science and Physics and acknowledges the contribution made by the teachers of Science and Physics at St Brigid's Vocational School Loughrea. The Board would particularly like to highlight the high quality of planning, teaching and learning and appropriate use of ICT that was observed by the inspector in his report.

We welcome the acknowledgement that the time allocation for Science and Physics is above syllabus guidelines and we will endeavour going forward to allocate double classes to all first and second year groups. The addition of a new Science laboratory due for completion in August 2015 will greatly enhance our ability to make this a reality going forward.

The Board would also like to recognise the massive extra-curricular commitment by our science teachers in promoting various science initiatives across the student body namely the BT Young Scientist Competition, GMIT Scifest, Science Quizzes, All Ireland Interschool's Science Debating Competition and the annual Chanelle Leaving Certificate Science Scholarship Awards.

## **Area 2 Follow-up actions planned or undertaken since the completion of the inspection activity to implement the findings and recommendations of the inspection.**

St Brigid's Vocational School subject departments are continuously updating their subject plans and as recommended in the subject inspection report, are now enhancing their plans with the inclusion of specific teaching methodologies, time frames and learning outcomes for each topic.

We welcome the acknowledgement that the time allocation for Science and Physics is above syllabus guidelines and we will endeavour going forward to allocate double classes to all first and second year groups. The addition of a new Science laboratory due for completion in August 2015 will greatly enhance our ability to make this a reality going forward.

We also wish to acknowledge the generous contribution of €10K to the St Brigid's science department by the Chanelle Group (Loughrea) to purchase additional science equipment for the science laboratories in the coming year.