An Roinn Oideachais agus Scileanna

Department of Education and Skills

Subject Inspection in Science & Biology

REPORT

School name	Borris Vocational School	
School address	Borris Co Carlow	
Roll number	70400L	

Date of Inspection: 06-11-2018

An Roinn Oideachais
agus Scileanna
Department of
Education and Skills

SUBJECT INSPECTION

Subject Inspections report on the quality of work in individual curriculum areas within a school. They affirm good practice and make recommendations, where appropriate, to aid the further development of the subject in the school.

HOW TO READ THIS REPORT

During this inspection, the inspector evaluated learning and teaching in Science & Biology under the following headings:

1. Teaching, learning and assessment
2. Subject provision and whole-school support
3. Planning and preparation

Inspectors describe the quality of each of these areas using the Inspectorate's quality continuum which is shown on the final page of this report. The quality continuum provides examples of the language used by inspectors when evaluating and describing the quality of the school's provision in each area.

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.

CHILD PROTECTION

During the inspection visit, the following checks in relation to the school's child protection procedures were conducted:

1. The name of the DLP and the Child Safeguarding Statement are prominently displayed near the main entrance to the school.
2. The Child Safeguarding Statement has been ratified by the board and includes an annual review and a risk assessment.
3. All teachers visited reported that they have read the Child Safeguarding Statement and that they are aware of their responsibilities as mandated persons.

The school met the requirements in relation to each of the checks above.

SUBJECT INSPECTION

INSPECTION ACTIVITIES

Date(s) of inspection	05 and 06-11-2018
Inspection activities undertaken • Review of relevant documents • Discussion with principal and science teachers • Interaction with students	• Observation of teaching and learning during seven lessons • Examination of students' work • Feedback to principal, deputy principal and science teachers

School context

Borris Vocational School is a co-educational school with an enrolment of 536 students. It is under the trusteeship of Kilkenny and Carlow Education and Training Board. The school provides the Junior Cycle programme, an optional Transition Year (TY) programme, the established Leaving Certificate and the Leaving Certificate Vocational Programme (LCVP).

SUMMARY OF MAIN FINDINGS AND RECOMMENDATIONS:

Findings

- The overall quality of teaching and learning was good; teaching practices in the lessons observed ranged from very good to fair.
- A good variety of learning approaches and methods was used; lessons provided opportunities for students to learn actively.
- Generally, the work assigned in lessons enabled students to develop skills as well as knowledge, provided a good level of challenge for students, extended students' subject-specific literacy and developed learner independence; but student voice and independence were not well developed in a small number of lessons.
- The quality of subject provision and whole school support is good.
- Subject department collaboration and lesson preparation were generally good, and the focus of the planning process is on continuous development; but the planning documents for Junior Cycle Science and TY Biology would be supported by planning for skills and by integrating the learning outcomes from the Nature of Science strand.

Recommendations

- To further develop current practice, all teachers should incorporate consolidation phases in every lesson and promote student independence in recording the key learning points in their copybooks.
- To further develop student voice, teachers should extend opportunities for students to explain their thinking.
- Within the subject plan for Science, teachers should place increased focus on integrating the learning outcomes from the Nature of Science strand of the specification and identify related learning outcomes from across the strands that could form Units of Learning.
- Teachers should further develop planning for the TY Biology module to include skills and more challenging learning activities.

DETAILED FINDINGS AND RECOMMENDATIONS

1. TEACHING, LEARNING, AND ASSESSMENT

- The overall quality of teaching and learning was good; in the lessons observed, there were instances of very good practice and instances of fair practice.
- Interactions between teachers and students were supportive, respectful and encouraging. Teachers generally welcomed students to lessons with notable warmth and enthusiasm. In the best lessons, the teachers, through their enjoyment of their subject, motivated students to engage productively in the tasks and to develop an appreciation of the impact of the topic on their lives.
- Lessons were well structured, with learning opportunities provided in a clear sequence to build understanding. A good variety of learning approaches and methods was used. Lessons provided opportunities for students to learn actively. All lessons included elements of laboratory work, tasks or activities that progressed understanding.
- The work assigned generally provided a good level of challenge; students responded very well to tasks and applied themselves productively. In a junior cycle lesson, an inquiry-based approach to designing a food web, combined with good teacher guidance, allowed students to apply and extend their learning. In a senior cycle lesson, a well-selected sequence of tasks required students to think, apply, reflect on and consolidate their learning of photosynthesis. In a TY lesson, the tasks assigned did not extend students beyond what they were already able to do. In these instances, teachers should ensure that tasks are developmental and designed to meet the aims of the particular programme.
- In Junior Cycle Science lessons, students were attaining knowledge and skills. Through the activities, students developed the ability to work collaboratively and independently and to communicate their observations. Overall, it is recommended that in the design and delivery of Science lessons, teachers place more emphasis on incorporating and developing the learning outcomes from the Nature of Science strand.
- An effective feature of many lessons was the emphasis placed on keywords. Some very good teaching strategies enabled students to use the words appropriately and in context. In some lessons, students' subject-specific literacy was developed when they used digital devices to research and review topics.
- During lessons, there was generally a good balance between teacher and student voice. Students communicated very well and consulted productively during tasks. They responded well to questioning and contributed opinions to class discussion. On occasion, students could have been expected to say more and to extend their contributions. To further develop student voice, all teachers should offer more opportunities for students to explain their learning in a way that extends their thinking.
- In some lessons, students developed personal responsibility for their learning. A number of teaching strategies to promote this was observed, including when students were challenged to carry out textbook chapter reviews and when students were required to independently complete a task before reviewing their work with their peers. These were highly effective and it is recommended that learner autonomy be extended whenever possible.
- Occasionally, good learning was not sufficiently captured or recorded by students during the lesson. Teachers should incorporate consolidation phases in every lesson and promote student independence in recording the key learning points in their copybooks.

- Students complete their homework assignments to a good standard. Some creative homework was assigned during the evaluation. There is some scope to diversify the range of homework tasks. On occasion, some mistakes made by students in their written homework should have been picked up on through teacher correction. Student tests and laboratory reports were generally very well corrected by teachers.
- Student work was displayed in the laboratories and this enhanced the learning environment for all. It is suggested that teachers also display teachers' evaluative judgements and formative feedback on these pieces so that other students can develop an understanding of what good and very good pieces of written work and research look like.

2. SUBJECT PROVISION AND WHOLE SCHOOL SUPPORT

- Senior management makes good provision for the subjects within the curriculum. Three science subjects are provided for Leaving Certificate. There is good provision for and access to the sciences within the TY programme. These are acknowledged as meeting students' needs and interests.
- The time allocated to the subjects is optimal. The deployment of teachers is well managed and, at senior cycle, teachers teach their subject specialisms.
- Almost all students take Science as a core subject for junior cycle. In order to access learning support lessons, some students with special educational needs do not study Science. Ways of enabling all students to access some Units of Learning in Science are currently being explored by the principal. This may be achieved through team teaching.
- The two laboratories are very well maintained. While there is high demand for access, this is managed very well as almost all lessons are held in a laboratory. The laboratories have been excellently enhanced with posters and signage that supports students in locating laboratory equipment during practical work.
- The principal, with the support of key staff, is currently developing the range of and access to digital devices that will support students in researching and presenting information electronically.
- A range of extra-curricular learning opportunities in the sciences is promoted and students are encouraged to become involved in these. Teachers have successfully engaged students in developing the school's biodiversity garden and recycling initiatives.

3. PLANNING AND PREPARATION

- Teachers' preparation for lessons was generally good, particularly when it was evident that consideration had been given to the impact of the planned activities on the incremental development of students' understanding and skills in the subjects.
- The subject department meets regularly. Good practices are evident in the reflection on the trends in attainment in examinations and the sharing of experiences. Collaboratively agreed subject plans have been developed for Science and Biology.
- The agreed plan for Junior Cycle Science is developing according to teachers' experiences of implementing the specification. While it is positive that the current first-year plan includes aspects of Understanding about Science in the first term, it is recommended that there be

greater integration of the learning outcomes from the Nature of Science strand throughout the plan for each year of Junior Cycle. Likewise, the current plan locates the learning outcomes from Communicating in Science in third year and these could be integrated throughout the programme. It is also recommended that as an alternative to following the chapters from the book, planning is approached by identifying related learning outcomes from across the specification strands that could form Units of Learning. Teachers could use the Junior Cycle for Teachers (JCT) resource materials in developing planning.

- The plan for the TY Biology module includes a range of topics and some interesting activities, but some of these could be more challenging and developmental. It is recommended that in developing this plan, the National Council for Curriculum and Assessment resource materials, including the Transition Units planning template be used. This would support teachers in building assessment approaches and key skills into the planning process.

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

THE INSPECTORATE'S QUALITY CONTINUUM

Inspectors describe the quality of provision in the school using the Inspectorate's quality continuum which is shown below. The quality continuum provides examples of the language used by inspectors when evaluating and describing the of quality the school's provision of each area.

Level	Description	Example of descriptive terms
Very Good	***Very good*** applies where the quality of the areas evaluated is of a very high standard. The very few areas for improvement that exist do not significantly impact on the overall quality of provision. For some schools in this category the quality of what is evaluated is ***outstanding*** and provides an example for other schools of exceptionally high standards of provision.	Very good; of a very high quality; very effective practice; highly commendable; very successful; few areas for improvement; notable; of a very high standard. Excellent; outstanding; exceptionally high standard, with very significant strengths; exemplary
Good	***Good*** applies where the strengths in the areas evaluated clearly outweigh the areas in need of improvement. The areas requiring improvement impact on the quality of pupils' learning. The school needs to build on its strengths and take action to address the areas identified as requiring improvement in order to achieve a *very good* standard.	Good; good quality; valuable; effective practice; competent; useful; commendable; good standard; some areas for improvement
Satisfactory	***Satisfactory*** applies where the quality of provision is adequate. The strengths in what is being evaluated just outweigh the shortcomings. While the shortcomings do not have a significant negative impact they constrain the quality of the learning experiences and should be addressed in order to achieve a better standard.	Satisfactory; adequate; appropriate provision although some possibilities for improvement exist; acceptable level of quality; improvement needed in some areas
Fair	***Fair*** applies where, although there are some strengths in the areas evaluated, deficiencies or shortcomings that outweigh those strengths also exist. The school will have to address certain deficiencies without delay in order to ensure that provision is satisfactory or better.	Fair; evident weaknesses that are impacting on pupils' learning; less than satisfactory; experiencing difficulty; must improve in specified areas; action required to improve
Weak	***Weak*** applies where there are serious deficiencies in the areas evaluated. Immediate and coordinated whole-school action is required to address the areas of concern. In some cases, the intervention of other agencies may be required to support improvements.	Weak; unsatisfactory; insufficient; ineffective; poor; requiring significant change, development or improvement; experiencing significant difficulties;