An Roinn Oideachais agus Scileanna

Department of Education and Skills

Subject Inspection of Science and Biology
REPORT

Corran College,
Ballymote, County Sligo
Roll number:72300R

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AN ROINN OIDEACHAIS AGUS SCILEANNA | DEPARTMENT OF EDUCATION AND SKILLS

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

SUBJECT INSPECTION REPORT

This report has been written following a subject inspection in Corran College. It presents the findings of an evaluation of the quality of teaching and learning in Science and Biology and makes recommendations for the further development of the teaching of these subjects in the school. The evaluation was conducted over two days during which the inspector visited classrooms and observed teaching and learning. The inspector interacted with students and teachers, examined students' work, and had discussions with the teachers. 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 of the school was given an opportunity to comment on the findings and recommendations of the report; the board chose to accept the report without response.

SUBJECT PROVISION AND WHOLE SCHOOL SUPPORT

Corran College operates under the auspices of County Sligo Vocational Education Committee (VEC). The full range of curricular programmes is provided in the school. Science is a core subject at junior-cycle level. Given the size of the school, it is not possible to provide all the science subjects at Leaving Certificate level. At present, Biology and Agricultural Science are available. The time allocation for the delivery of the science subjects is good and there is a good spread of classes throughout the week.

The laboratory is bright and clean and it contains good scientific exhibits as well as student - generated posters and displays of key words and terminology. Double science classes are timetabled for the laboratory where possible and this is good practice. There is a storage and preparation area adjoining the laboratory. Equipment and resources are stored in an organised manner. The chemical store is usually locked and students are not permitted to enter the preparation room without permission from their teacher. Appropriate cupboards are available for the storage of flammables and toxics.

There is a strong emphasis on health and safety in the school. A code of conduct for the laboratory is displayed at the end of each bench in the laboratory and a list of telephone numbers for the emergency services is prominently displayed. Appropriate health and safety equipment was observed and the school has a health and safety statement which has recently been ratified by the board of management. Accident reporting procedures are documented and accident report sheets are provided in the laboratory.

Information communications technology (ICT) plays a key role in supporting teaching and learning in the sciences. The laboratory is broadband enabled and is equipped with a PC, data projector and screen. A good level of other resources is also available to support the teaching and learning of science in Corran College. These include posters, models and laboratory equipment. A number of Powerpoint presentations, animations, worksheets and handouts are available on the

common ICT server in the school. This allows the effective sharing of resources among the science teachers. The science team has begun the process of organising materials and equipment into kit boxes for the Junior Certificate mandatory practical activities. This commendable practice is encouraged. An interactive white board is available in one classroom and teachers can avail of this resource on a booking system. The school also has a library which contains a number of science-related books.

There has been good engagement with continuing professional development (CPD) and this is encouraged by management. Recent whole-school CPD has included presentations on co-operative learning, the Junior Certificate Schools Programme (JCSP) and Autism. Members of the science team have attended CPD in areas such as assessment for learning (AfL), Discover Sensors, an Intel 'teach to the future' presentation as well as courses in Sligo Education Centre on the use of the interactive whiteboard and the digital camera.

PLANNING AND PREPARATION

The science department takes a collaborative approach to planning for the subject in the school. A subject co-ordinator is in place for both Science and Biology. In keeping with recommended practice, this role rotates among members of the team. The science team has formal meetings, which are facilitated by management, approximately every month. Minutes are taken and retained, thus providing a firm record of discussions and decisions. Additional meetings, when required, are held. The team also holds informal meetings, which contribute to the smooth running of the department.

A subject plan is in place for Junior Certificate Science. It outlines the common agreed teaching programme for all year groups and an appropriate timeframe. The resources to be used and the main forms of assessment were also documented. The programme of work for first year science included the learning outcomes based on the Junior Certificate Science syllabus. This is good practice and it should be extended to the programmes of work for all year groups. The programmes of work should now be further developed to link them to appropriate methodologies and student activities. It is recommended that the science team develop a common template for their programmes of work which can be adapted for all year groups.

Planning documentation was also provided for Leaving Certificate Biology. The programmes of work outlined the topics to be taught in each year of the Leaving Certificate programme, an appropriate timeframe and the associated mandatory practical activity. The template recommended earlier should also be adopted for Leaving Certificate Biology. There is scope to provide students with an overview of the course at the beginning of the year. This will provide them with a clear outline of the programme as well as a useful revision tool.

Good links have been established with the learning support department which provides teachers with information on the specific learning needs of the students in their classes as well as suggested teaching strategies. JCSP notebooks have also been provided for JCSP students at the beginning of the term and they had commenced using them in their classes. In future planning meetings, the science team should discuss and share best practice in differentiated teaching methodologies with a view to developing differentiated resources for each year group. These should then be documented in the programmes of work.

TEACHING AND LEARNING

Good quality teaching and learning were observed in all lessons. The short-term planning for the selection and preparation of resources was very good. The lessons were very focused and the quality of the planning ensured that the structure and pace were appropriate for the relevant year groups. Teachers shared the learning outcomes with the students at the outset and returned to these outcomes throughout and at the close of lessons. There was evidence of good continuity with previous lessons by linking with and building on students' prior knowledge and experiences.

A positive atmosphere for learning was created in all lessons evaluated. Student-teacher and student-student relationships and rapport were very good. Teaching methods, curriculum content and materials used were appropriate. Teacher inputs were generally short, clear and concise and lessons developed progressively. Individual student contributions were valued and students enjoyed a good variety of learning experiences.

The content and delivery of lessons were commendable. Students were active in their learning and participation levels were good. Practical lessons were conducted in a safe environment with students competent at using the science equipment and materials. During some tasks, students were required to work in pairs or in teams. They engaged well with the tasks and there was a good balance of student inputs and participation.

Teachers adopted a good visual approach to lessons, incorporating the use of Powerpoint diagrams, pictures, photographs, as well as plants and posters. The whiteboard was used to good effect in one lesson to clarify diagrams on atomic structure. Worksheets were distributed in some lessons and these worksheets consolidated and focused students' learning. In one lesson, students were asked to read aloud a short section on a worksheet. Teachers placed emphasis on the use of key words and science specific terminology. Students were encouraged to use the correct pronunciation of the new terms and these were then noted in students' JCSP keyword diaries. Good use was made of the JCSP keyword posters in some classes and this is good practice.

Questioning was used as a methodology in all lessons. Teachers made good use of a range of question types. Probing questions, lively discussion and group work ensured that learning was active. Critical thinking skills were developed as questions were designed to elicit specific responses but emphasis was also placed on higher-order questions, which encouraged students to hypothesise, to speculate and to explain their reasoning. Students' responses to questions from the teacher and the inspector indicated that students' understanding of material was good.

ASSESSMENT

The school has a homework policy and the science department adheres to its guidelines. Homework is regularly set and corrected. Students are encouraged to note their homework into their homework journals at the end of each lesson. The class tutor inspects each homework journal on a weekly basis and parents are encouraged to sign same.

In-house examinations are held at Christmas and summer for non-certificate examination classes. Common examinations are held where feasible and a percentage of the overall mark is allocated for the standard of the mandatory practical notebooks. Mandatory practical books were generally of a good standard. They were tidy and well maintained and included an appropriate number of

practical write-ups. Teachers regularly encourage students to maintain these books to a high standard and this is good practice. Students also have notebooks for class work and homework. Some students also store worksheets and handouts in folders. Teachers should encourage all students to maintain a folder in which to organise their class notes and materials so that they are useful revision documents. Class work and homework are regularly checked and corrected by the teacher. There were many instances where the feedback was formative and directional in nature. This good practice should be extended across the science team. There is also scope for teachers to encourage students to act on corrections made by the teachers. These practices should be documented and included in an overall policy on assessment.

An analysis of the student outcomes in the certificate examinations is carried out by the principal and subject teachers. This good practice is shared with the parents association, board of management and the students. The results are used in subject department planning to assess areas of strength and weakness in the subject department as well as make comparisons with national averages.

SUMMARY OF MAIN FINDINGS AND RECOMMENDATIONS

The following are the main strengths identified in the evaluation:

- Science is a core subject at junior cycle level.
- The laboratory is bright and clean and contains good scientific displays as well as student-generated posters and displays of key words and terminology.
- Student-teacher and student-student relationships and rapport were very good.
- The science department takes a collaborative approach to planning for the subject in the school.
- Information communications technology (ICT) plays a key role in supporting teaching and learning in the sciences.
- Students were active in their learning and participation levels were good.
- Teachers adopted a good visual approach to lessons, incorporating the use of Power point diagrams, pictures, photographs, as well as plants and posters.
- Homework is regularly set and corrected.

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

- It is recommended that the science team develop a common template for their programmes of work which can be adapted for all year groups.
- In future planning meetings, the science team should discuss and share best practice in differentiated teaching methodologies with a view to developing differentiated resources for each year group.

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

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