

An Roinn Oideachais agus Scileanna

Department of Education and Skills

**Subject Inspection of Materials Technology (Wood) and
Construction Studies
REPORT**

**Coláiste Iascaigh
Easkey, County Sligo
Roll number: 72320A**

Date of inspection: 20 April 2010



**AN ROINN | DEPARTMENT
OIDEACHAIS | OF EDUCATION
AGUS SCILEANNA | A N D S K I L L S**

REPORT
ON
THE QUALITY OF LEARNING AND TEACHING IN MATERIALS TECHNOLOGY
(WOOD) AND CONSTRUCTION STUDIES

SUBJECT INSPECTION REPORT

This report has been written following a subject inspection in Coláiste Iascaigh. It presents the findings of an evaluation of the quality of teaching and learning in Materials Technology (Wood) and Construction Studies and makes recommendations for the further development of the teaching of these subjects 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 the teacher, examined students' work, and had discussions with the teacher. The inspector reviewed school planning documentation and the teacher's written preparation. Following the evaluation visit, the inspector provided oral feedback on the outcomes of the evaluation to the principal and the subject teacher. The board of management 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.

SUBJECT PROVISION AND WHOLE SCHOOL SUPPORT

Coláiste Iascaigh currently caters for 115 students, 59 males and 56 females. An open night is held annually to inform potential incoming students and their parents of the subject choices that are available to them and to showcase the facilities in the school. This information evening is attended by almost all the staff of the school including the guidance counsellor and the principal.

Materials Technology Wood (MTW) is offered as one of the six optional subjects for study for the junior cycle programme, with students required to choose either MTW or Art. First year students are given an opportunity to sample the optional subjects for the first eight weeks of term before being asked to make their final subject choices. Students are supported at this time by the guidance counsellor and the subject teachers. Parents are supported by the provision of an information night, held at the end of September, to discuss subject choice. This opportunity to sample subjects provides a robust support for students' decision-making and is commended.

It is possible, within the current arrangements around optional subjects, for students to study MTW, Technical Graphics and Metalwork. Having the opportunity to study three technology subjects for the Junior Certificate is highly beneficial to students as these subjects are complementary to each other. The decisions around how the optional subjects are arranged are based on an audit of optional subject choices at junior and senior cycle conducted in 2008. This audit represented very good practice. It is recommended that similar audits are carried out annually to ensure that the structuring of the optional subject bands best suits the choices and aptitudes of the current student cohort.

At senior cycle, Construction Studies (CS) is offered in the established Leaving Certificate (LC) programme and Graphics and Construction Studies is offered in the Leaving Certificate Applied (LCA) programme. Support for students in third year, in the form of information and advice on subject and programme choice, is currently provided by subject teachers and the guidance counsellor. The principal also speaks to students on an individual basis. Parents are invited to attend an information night where the subjects and programmes on offer are discussed. These arrangements provide a good model for making informed choices.

Time allocation for the subjects is good across all the year groups and programmes. The provision of double and single periods allows lessons to be more evenly distributed across the week as well as catering for practical work, project work, drawing and theory.

Participation rates indicate that MTW and CS are popular choices amongst male students in the school. Participation by female students is above the national average for the subjects and this is a positive development. The number of females studying the subject however is still low and it is recommended that school management and the subject department explore ways to encourage more females to study the subjects. The school website and the school prospectus, for example, could include input from current and past female students describing their experience of the subjects. A survey of the female students in the school is suggested to determine their attitude to the subjects. The results of such a survey could provide useful information and guide further development in this area.

The subjects are taught in a spacious well-maintained room. Care and attention has been paid to the room with a great variety of interesting and creative students' projects displayed to good effect. The room provides an exciting and stimulating learning environment for the students. The subject is well resourced with materials, machines, portable power tools and hand tools. Dust extraction facilities are very good with a central system for the large machines and many of the other machines having individual dust extraction systems. Resources including wood and small items of equipment are supplied in response to the needs of the department after direct appeal to the principal. These arrangements are working effectively.

Senior management is very supportive of staff involvement in continuing professional development (CPD) and there has been an excellent level of engagement with relevant subject-specific in-service activities. The teacher has attended each in-service session provided by the Technology Subjects Support Service (T4) as well as in-service on co-operative learning, computer maintenance, ICT teaching methodologies and *SolidWorks*. The commitment shown by the teacher in attending so many courses outside school time deserves particular acknowledgement.

PLANNING AND PREPARATION

Formal planning meetings are facilitated twice during the year. Records of meetings are retained in subject planning documentation, as is good practice. These minutes of meetings are very brief and since they form the subject department records they should provide more detail of the good work being done by the department. Formal meetings are supplemented by frequent informal meetings between the teachers of the technology subjects. These arrangements contribute positively to the maintenance of strong links and good collaboration between subject departments.

The MTW and CS plans follow the SDPI template and planning is well progressed. Within the planning documents, schemes of work have been developed which are in line with syllabus

requirements. The schemes are broken down into half-year blocks of work. It is suggested that by dividing each body of work into shorter time frames it would enable more accurate tracking of progress through the schemes throughout the year. As a further step towards the development of these plans it is recommended that for each topic to be covered, the desired learning outcomes for the students be listed. Reference should also be made to the resources available for the teaching of the topic, suggested teaching methodologies to be used and the proposed method of assessment. This would greatly improve the plans as integrated useful working documents. Planning for the LCA Graphics and Construction Studies course is not as well progressed and it is recommended that work on this commence immediately.

All classes in MTW and CS are of mixed ability and there is good differentiation of work to allow all students succeed at a level appropriate to their abilities and interests. Access to higher level and ordinary level is accommodated within these class groups. Students' outcomes in the certificate examinations are analysed and compared to the national averages each year by the subject department. This analysis provides a valuable insight to the standing of the subjects and is used to inform future planning. The analysis shows very high participation and success rates at higher level in these subjects.

Planning to support students with additional educational needs is undertaken in collaboration with the school's learning support department. The additional support provided is particularly evident in the case of third year students as they prepare the written element of their project brief for the Junior Certificate examination. Students following the Junior Certificate School Programme (JCSP) benefit from having a key-words list for the subject displayed prominently at the front of the room. It is suggested, as a further support for the development of literacy for all students, that all new terminology encountered during a lesson be displayed on a flip chart, poster or on the whiteboard. Students should write these words in their copies and the new words should remain on view for several lessons.

The involvement of the subject department in cross-curricular activities is highly commended. One recent community project involved the production of a crib for the local church. At the time of the inspection the first year students were engaged in the design and manufacture of bird feeders and bird houses as part of a link with a Civic, Social and Political Education (CSPE) action project to improve biodiversity in the school grounds. There has also been recent involvement from the subject department in the Green-Schools programme.

The subject department has a detailed safety statement in place which is based on a safety audit of the room carried out in 2004. The document contains a hazard analysis, risk assessment and control procedures for the key pieces of specialist equipment in the room. The document is reviewed annually as is good practice. The demarcation of safe operational areas (SOAs) is evident around the machines with adequate safety signage on display. To further improve on these safety provisions it is recommended that the machine-specific safe-use rules, already prepared within the safety statement, be printed, laminated and displayed adjacent to each machine.

TEACHING AND LEARNING

All lessons observed during the course of the inspection had clear aims and learning outcomes which were shared with the students at the outset. Continuity with previous learning was assured by means of well paced introductions to the lessons. Global and directed questions, including

higher order questions, were used effectively to revise previous learning, to advance students' understanding of concepts and to introduce new topics.

Good routines were evident in the practical lessons observed. Little time was lost during the setting up and clearing away of tools and work pieces in the workshop. Such routines promote individual responsibility amongst students and reflect consistency in lesson structure. It was obvious that students were used to a neat and ordered environment and willingly contributed to the maintenance of these high standards.

At the time of the inspection the sixth year CS students were engaged in completing project work associated with the certificate examinations. A wide range of woodcraft projects was being produced as well as models of building details from a number of different areas of the syllabus. Work was of a very high standard and the variety in the type of project being undertaken clearly benefited all the students in the class. The building models in particular serve to clarify and reinforce the theory element of the subject and can be used as teaching aids for subsequent lessons.

The principles involved in the design process were a central element of all the practical lessons observed. Group work was used effectively in lessons as an intermediate step between the whole class producing identical projects at the beginning of first year and the final aim of each student being able to produce their own unique and individual solution to a design problem. To further improve on this good practice it is recommended that students are asked to process the written element of a design brief in first and second year for one of the larger projects they work on during the year. This design brief should follow the criteria laid down by the State Examinations Commission for the Junior Certificate project brief.

Deliberate efforts were made by the teacher to integrate relevant theoretical information into all practical lessons. Terminology associated with the subjects was used and emphasised during lessons and this allowed students assimilate this terminology while working on their own tasks. This enhanced teaching and learning is praiseworthy. During one junior cycle lesson observed the students needed to design a decorative handle for a project which they were completing. The teacher skilfully used this opportunity to introduce the terminology and procedures involved. A short theoretical lesson followed on the steam bending of timber, laminating of timber and the cutting of curves from solid timber. Information and communications technology (ICT) was used effectively to display short videos of various techniques, to display photographs and to present notes. In addition to this students were further supported in their learning by the display of physical examples of curved work.

The teacher demonstrated best health and safety practices at all times and ensured that students did likewise by closely monitoring all activities. Throughout lessons the main safety points were consistently repeated to reinforce learning and compliance. There was appropriate use of personal protection equipment (PPE) in all situations where this is deemed necessary and this is commended.

The excellent rapport and mutual respect evident between the students and the teacher encouraged a good classroom atmosphere. Students were relaxed and secure while they worked and actively engaged in learning activities. Students' efforts were acknowledged and affirmed regularly as the teacher moved around the room. Classroom discipline was sensitively maintained at all times.

ASSESSMENT

The school has recently moved towards a system of continual assessment across all year groups. Class tests are held at the end of each month with a more demanding examination at Christmas and summer. Assessment of project work and portfolio work also feed into this system. Average results are calculated with a heavier weighting for the Christmas and summer tests to produce a grade which is sent home to parents on a school report form. Students are kept informed of their progress throughout the year and parents are invited to attend one parent-teacher meeting during the spring. To further clarify this system of assessment it is recommended that the weighting of marks allocated towards monthly tests, portfolio work, practical work and Christmas and summer tests be displayed prominently in the classroom or distributed to the students. This would allow students to more accurately track and take greater responsibility for their progress.

Students sitting certificate examinations have 'mock' examinations in early spring. This is their only opportunity to familiarise themselves with the pressures of the examination situation, fine tune their examination technique and practise their timing of answers. It is recommended that these students be given additional practice of long examinations during the year.

Special care is taken to monitor first year students during their first few weeks in the school. A progress report for each student is filled in by subject teachers. This report is then used by the guidance counsellor and principal to identify students in need of extra support. This proactive approach to student welfare is commended. A similar report is used to monitor students from other year groups about whom a teacher may have concern. Once a report is completed the interventions needed are more easily identified.

Students' homework and portfolio work is monitored regularly as is good practice. Feedback to students is in the form of brief comments. In keeping with assessment for learning (AfL) principles it is recommended that more extensive comments of a developmental nature be provided to students. The MTW planning documentation suggested feedback should, where possible, take the form of two positive comments and one area in need of development. This approach would allow good work to be affirmed and also highlight opportunities for improvement and should be adopted.

Good use is made during the monthly tests of peer assessment. Students are given the marking scheme and model answers for the test and are asked to use these to mark another student's work. The teacher cross checks the standard of marking and writes an overarching comment. This is very good practice as it ensures the students become familiar with the model answers as well as the workings and weightings of the marking scheme.

SUMMARY OF MAIN FINDINGS AND RECOMMENDATIONS

The following are the main strengths identified in the evaluation:

- The resources made available to the subject department are very good.
- Participation of females in the subjects is above the national average.
- The classroom provides an exciting and stimulating learning environment for the students.
- The teacher has engaged in extensive CPD.

- The subject department is closely involved in co-curricular and community-based projects.
- A detailed health and safety statement is in place which is reviewed annually.
- In all lessons observed the teaching and learning was of a very high standard.
- There was an excellent integration of ICT in the teaching and learning of the subject in the lessons observed.
- The standard of student project work observed was very high.
- All activities were well planned and organised, a factor which ensured that the learning environment was appropriately ordered.
- The school has moved to a system of continual assessment across all year groups.
- Peer assessment among students is used as a teaching and learning tool.

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

- The layout of the schemes of work should be revised so as to identify the student learning outcomes, teaching and learning resources available, the proposed teaching methodologies and the possible assessment methods for each topic.
- As a support for literacy any new terminology encountered during a lesson should be written and displayed on a flip chart or poster.
- Machine-specific safe-use rules should be printed, laminated and displayed adjacent to each machine.
- Students in first and second year should process the written element of a design brief for one of the larger projects they work on during the year.
- The written feedback provided to students on their class work, portfolio work and homework should be more extensive.

A post-evaluation meeting was held with the principal and the teacher at the conclusion of the evaluation when the draft findings and recommendations of the evaluation were presented and discussed.

Appendix

SCHOOL RESPONSE TO THE REPORT

Submitted by the Board of Management

Area 1: Observations on the content of the inspection report

The board wishes to welcome the findings of the recent subject inspection in Materials Technology Wood and Construction Studies at Coláiste Iascaigh. The report affirms the good practice that exists in the subject area and the school in general.

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

Work on addressing the recommendations made in the report has begun and will continue to form part the school's planning process in all subjects into the future.