

An Roinn Oideachais agus Scileanna

Department of Education and Skills

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

**Saint Patrick's College
Cavan, Co. Cavan
Roll number: 61060M**

Date of inspection: 24 March 2010



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

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 St Patrick's College, Cavan, conducted as part of a whole-school evaluation. 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 teachers, examined students' work, and had discussions with the teachers. The inspector reviewed school planning documentation and the teachers' written preparation. Following the evaluation visit, the inspector provided oral feedback on the outcomes of the evaluation to the principal.

SUBJECT PROVISION AND WHOLE SCHOOL SUPPORT

St. Patrick's College offers Materials Technology Wood (MTW) as an optional subject for the junior-cycle programme. Students are given the opportunity to sample all the optional subjects offered by the school during their first three months in first year. Towards the end of this period, the students are given support in the selection of their subjects for the Junior Certificate from the guidance counsellor and subject teachers. Parents are kept informed of these procedures by newsletter so that they can assist their children in making choices. Every effort is made to accommodate students' preferences. It is noted that students can study both MTW and Technical Graphics (TG) for their Junior Certificates which is good practice as these are complimentary subjects. The number of students studying the subject in the school is increasing. The opportunity to sample subjects provides a robust support for students' decision making and is commended.

Students moving to senior cycle are given an open choice of optional subjects with Construction Studies (CS) being one of these. Option bands are generated based on students' choices with every effort being made to ensure that students' preferences are accommodated. Parents and students are supported during this time by the guidance counsellor and subject teachers. Parents are also invited to attend an information night in April. These arrangements form a good model for the making of informed decisions.

Both junior-cycle MTW and senior-cycle CS receive an appropriate time allocation for the teaching and learning of the subjects. This allocation includes double and single periods and these classes are well distributed across the week.

All classes in MTW and CS are of mixed ability, and the work being undertaken in the lessons visited was differentiated in a natural and inclusive manner to allow all students to succeed at a level appropriate to their abilities and interests. Access to higher-level and ordinary-level courses in these subjects is accommodated within class groups.

The school has two specialist rooms available for the teaching of MTW and CS with ample extra storage space adjoining each room. Both rooms are well equipped and maintained. Tools and equipment are neatly organised and stored in racks and shelving. Examples of student work are displayed and the walls are decorated with informative wall charts and safety signage. This all helps to provide a stimulating learning environment for the students.

The subject department is well resourced with materials, machines, portable power tools and hand tools. Additional resources may be purchased following consultation with the principal and all reasonable requests are acceded to without delay. This arrangement is reported to work effectively in the school.

The use of information and communications technology (ICT) in the teaching and learning of the subjects is actively promoted by senior management. A laptop computer and a ceiling-mounted data projector are available in both rooms and it was evident during lesson observation that these resources are used to good effect.

Over the last number of years MTW and CS teachers have attended extensive in-service provided by the Technology Subjects Support Service (T4). They have also attended additional training, during their own time, in Monaghan Education Centre. The commitment of senior management and of the teaching team to continuing professional development (CPD) deserves acknowledgement.

PLANNING AND PREPARATION

The MTW and CS subject departments have an overarching co-ordinator and this role is rotated among the subject teachers. Formal subject planning meetings are held at least once per term with minutes retained and shared with management. These formal meetings are supplemented by frequent informal meetings of subject teachers throughout the year. These arrangements work well in the school and contribute positively to maintaining strong and effective subject departments.

All lessons observed during the evaluation were well planned with necessary classroom resources prepared in advance. Lessons were appropriately related to the level of each class group and their progression through the subject syllabuses. In keeping with good practice, students' outcomes in certificate examinations are analysed by the teachers every year and are compared to the national averages.

There was good evidence in the lessons observed of planning to support literacy. All storage racks had clear labels attached, naming the tools and equipment. Furthermore, a flip chart was used to record any new terminology introduced during the lessons and this was left on display. Both of these initiatives form a good support for all students when learning new words but particularly for students who may have difficulty with spelling.

The subject department is involved in extracurricular and co-curricular projects. In collaboration with the Art department it produces the stage sets for the annual school musical. The school has also recently held an exhibition of students' work in ceramics and wood carving through collaboration between the Art and MTW departments. This involvement of the technologies teaching team with other areas of the school is commended.

In spite of evidence of good planning within the departments, planning documentation was not made available to the inspector during the evaluation. It is important that each subject department have a plan and that it is available in the school to guide teaching and learning. The plan should identify the aims and objectives of the MTW and the CS courses. Schemes of work should be integrated into the plans. Each year group should have a scheme of work in which the body of work to be covered by students is divided into manageable portions. This will allow accurate tracking of progress through the scheme throughout the year. It is recommended that the proposed learning outcomes for students for each topic to be covered are listed. Reference should also be made to the teaching methodologies to be used, the resources available and the planned method of assessment of student achievement. Specific and detailed information on project work to be completed should form part of this plan. The development of such a plan will increase collaboration and discussion amongst the teaching team and will ensure that it is a useful working document. Further information on what should be included in a subject department plan is available on the SDPI website (www.sdpi.ie/Subject_Department_Planning.html).

The school's health and safety statement does not contain any specific reference to the woodwork rooms. It is recommended that a risk and hazards analysis be carried out for these rooms and that the resulting document is included within the school's overarching health and safety plan. All hazards should be noted with a parallel list of control measures put in place to control risk. Many of these hazards will be machine-specific and as such will transfer with the machines when the school moves to its planned new premises. The drafting of the document should be guided by reference to the *Review of Occupational Health and Safety in the Technologies in Post-Primary School* which is available for download from the Department of Education website (www.education.gov.ie). Further useful safety resources are available on the T4 website (www.t4.ie).

The demarcation of safe operational areas (SOAs) is evident around most machines in the workshops. It is recommended that SOAs are marked around the circular saw and the planer/thicknesser also. Furthermore the display of machine-specific safe-use rules adjacent to each machine would complement the existing displays of standard safety signage.

TEACHING AND LEARNING

Lessons observed had clear aims and objectives and these were shared with the class groups at the outset. In each case the work of the lesson began with a brief revision of previous work. Good use was made of varied questioning to elicit information from students' prior knowledge. The lessons were then developed in a carefully structured and coherent manner.

Effective routines were evident in all lessons visited. In practical classes the students collected their project work-pieces from where they were stored and were quickly ready to begin. Procedures at the end of lessons were equally well ordered and little time was lost. Such routines ensure that the learning environment is well managed and safe.

During one senior-cycle lesson observed, the teacher used a wide range of teaching methodologies and resources. The topic of stair construction and the building regulations related to stairs was introduced through questioning which then lead on to the showing of a video clip. The overhead projector was used to provide concise notes and diagrams which the students transcribed into their hardback copies as the lesson progressed. Further questioning encouraged students to express and discuss their ideas. Reference was made to the textbook to complement the classroom activities. Towards the end of the lesson, the students were called up around a

model of a portion of a stairs and all salient points were reinforced by the teacher. Smooth transitions through the various elements of the lesson sustained an appropriate pace. By using such a variety of aids and resources the teacher ensured that the students' interest was maintained throughout.

At the time of inspection, students of Leaving Certificate CS were engaged in project work associated with the certificate examinations. A variety of woodcraft projects which exhibited good design principles were being completed. Students demonstrated the ability to work independently and were left to do so, which is good practice. The constant movement of the teacher around the room, monitoring progress and offering help and advice when required, was a sufficient support for the students. It is recommended that efforts be made by the subject department to broaden the range of projects produced by students to include a greater number of projects from the areas of architectural heritage and the modelling of building details.

In the MTW lessons observed, students' learning was effectively scaffolded when teachers demonstrated MTW principles and skills incrementally to whole-class groups, to smaller groups and to individual students. Demonstrations are extremely important as they allow teachers to model the proper execution of woodworking skills. The constant reference by the teacher to health and safety issues during these demonstrations is commended.

The principles involved in the design process formed an important element of practical classes across all year groups. Students maintain a design folder for each project they produce and this is commended. Teacher input into the design of project solutions decreases as student input and confidence in this area increases. With this in mind, it is suggested that group work be used as an intermediate step between the whole class producing identical projects and the ultimate aim of each student producing their own unique solution to a design problem.

Good use was made of ICT during lessons. Students ready to decorate their projects using pyrography were shown digital photographs and pictures, downloaded from the internet, to help stimulate creative ideas. The use of this technology allows the presentation of concise, information-rich notes in tandem with sketches, scaled drawings and photographs. The teacher used this resource well to supplement the more traditional methods of presentation.

Subject-specific terminology was used continually by teachers during the lessons observed. Students demonstrated their ability to communicate with their peers, the teacher and the inspector using appropriate subject-specific language. This good communication was facilitated by the excellent rapport between teacher and students. Students participated in all activities with enthusiasm and their efforts were constantly affirmed by the teacher. This created an atmosphere where discipline was maintained in an easy and relaxed manner.

ASSESSMENT

Students in certificate examinations classes have tests mid-way through the first term and sit mock examinations in spring. All other year groups have formal assessments at Christmas and at the end of the school year. Reports are sent home to parents following each assessment. The parents of students in each year group are invited to attend one parent-teacher meeting per year. In addition to this, the school will supply a progress report at any stage throughout the year, if requested by parents. End-of-topic tests are also used to track students' progress through the courses and to help maintain a good student work rate. These arrangements are satisfactory.

There is continuous assessment of class work and student project work in MTW and CS with formative oral feedback given during lessons. Students' portfolio work and copies are monitored regularly with written comments which are both affirming and developmental in nature indicating the quality of work and how it might be improved. Homework is allocated, collected and corrected regularly. Homework supports the work students do in school and is an important part of the learning process. These procedures are very supportive of student work and are commended.

Record keeping by teachers is of a high standard. Students' attendance, attainment and progress are recorded systematically in teachers' diaries. These records are used to identify trends in student achievement. They also help the teacher to provide focused interventions tailored to the needs of individual learners. The records form the basis of communication at the annual parent-teacher meetings.

SUMMARY OF MAIN FINDINGS AND RECOMMENDATIONS

The following are the main strengths identified in the evaluation:

- Every effort is made to ensure that students' option subject preferences are accommodated.
- Time allocation for the teaching and learning of the subjects is good.
- The subject department is well resourced with rooms well equipped and maintained.
- Teachers have attended all subject-specific provided by the Technology Subjects Support Services (T4) and have attended additional training, during their own time, in Monaghan Education Centre.
- A subject co-ordinator has been appointed, meetings are held regularly and minutes are kept.
- There was good evidence of planning to support literacy.
- The subject department is involved in extracurricular and co-curricular projects.
- High-quality teaching and learning was observed in all lessons.
- A wide range of teaching methodologies and resources was being used.
- Teachers used ICT very effectively to support student learning.
- The procedures in place for monitoring students' progress are very good.

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

- The subject department plan should be developed in line with the guidelines outlined in this report.
- A document should be drawn up by the subject department which identifies all significant hazards in the workshops and which lists control measures to be put in place to reduce risk.
- Safe operational areas (SOAs) should be marked around the circular saw and the planer/thicknesser with machine-specific safe-use rules displayed adjacent to all machines used by students.
- A greater number of students should be encouraged to attempt projects from the areas of architectural heritage and the modelling of building details.

A post-evaluation meeting was held 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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