

**An Roinn Oideachais agus Scileanna**

**Department of Education and Skills**

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

**Beaufort College  
Navan, County Meath  
Roll number: 72010I**

**Date of inspection: 24 February 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**

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**SUBJECT INSPECTION REPORT**

This report has been written following a subject inspection in Beaufort College carried out 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 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 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**

Beaufort College offers Materials Technology Wood (MTW) as an optional subject at junior cycle and the uptake of the subject is high. Prior to attending school in first year, students make their choice of optional subjects which may include MTW. Assistance provided for making subject choice includes an open night for parents at which senior management present and explain the available choices. The principal and the school guidance counsellor are available to provide further support to parents if the need arises. Students are permitted to change their option subjects up to the mid-term break in October. It is suggested that the possibility of providing students with an experience of each of the optional subjects be explored, before they make their final choices in first year. Such an opportunity to sample subjects would provide a robust support for student decision making. Good practice is that subject option groups would then be based on the students' expressed preferences, taking account of the constraints of staffing and timetabling.

Construction Studies (CS) is one of the optional subjects offered for the Leaving Certificate. Students moving to senior cycle are given an open choice of subjects, with option bands then developed based on their expressed choices. Parents and students are supported during this time by subject teachers, the guidance counsellor and management. Every effort is made to ensure that students' subject choices are accommodated. These arrangements form a good model for the making of informed choices.

Although open access to the subjects is available it is notable that MTW classes have relatively few girls and that CS classes are composed exclusively of boys. Management, the guidance department and the subject teachers are urged to explore the reasons for this gender imbalance and to put procedures in place that will encourage more female involvement, particularly at senior cycle. It is suggested that an in-school survey of all senior-cycle female students, particularly those who had studied MTW at junior cycle but did not follow through to study CS, could yield

valuable insights. Furthermore consideration should be given to developing a simple but attractive brochure for the subject, with input from past female students or local businesswomen involved in the construction industry.

Time allocation for the subjects at junior and senior level is very good. The division of the allocated time into double and single lessons and the good distribution of these lessons across the week provide the optimum arrangement for effective teaching and learning of the subjects.

MTW and CS are taught in two specialist rooms which are bright and well maintained. The walls display some teacher-generated charts and purchased posters which assist in creating a stimulating visual learning environment for students. This is good practice. There are many examples of students' project work in both rooms and it is recommended that efforts be made to display their work in an organised and structured way. The construction of an area specifically designed for the proper displaying of students' project work would help to stimulate and inspire students, would promote the work of the department and would also create a focus of interest during the school's open nights.

The subject teachers have attended all sessions of the programme of continuing professional development (CPD) made available through the Technology Subjects Support Service (T4). School management is commended for supporting, encouraging and facilitating this in-career development of the teaching team.

## **PLANNING AND PREPARATION**

A separate subject co-ordinator has been appointed for both MTW and CS. Formal subject-department meetings are facilitated at the beginning of each school year with a second meeting usually held in January. It is recommended that records of meetings be retained in the subject planning documentation and copied to senior management.

The subject plan for CS contains a programme of work consisting of a series of lesson headings. A scheme of work for MTW students was not included in the planning documentation. It is recommended that the teaching team urgently develop agreed schemes of work, in line with syllabus requirements, for each year group. These should be broken down into short time frames to facilitate the accurate tracking by teachers of the progress being made through the programmes of work. Alongside each topic should be listed the proposed learning outcomes for the students, the methodologies to be used, the resources needed and the methods of assessment. The discussion generated in formulating such a plan will assist towards the unification of the subject department's approach to the delivery of the two subjects.

There is good involvement of the technologies teaching team in co-curricular activities such as the Star of David flowerbed project, the window box project and the Travellers' Wagon project. There was also much evidence of collaboration with the art department on the displaying of students' art work.

The school's health and safety statement does not contain a specific reference to the woodwork rooms. It is recommended that a risk and hazards analysis be carried out for these rooms, that a document be drawn up and that this document be included within the school's health and safety statement. This 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 and Skills website ([www.education.gov.ie](http://www.education.gov.ie)). The document should be reviewed annually.

The planning and preparation done for the individual lessons observed was very good. All activities were well planned and organised. This helped to ensure that the learning environment was appropriately ordered.

## **TEACHING AND LEARNING**

All MTW and CS lessons observed had clear aims and objectives and were suitable for the stage of the programme being delivered. In each case the work of the lesson was linked to previous learning through the use of global and directed questioning. The use of higher-order questions to advance students' understanding of concepts and to support their learning was also observed. This is good practice.

Demonstrations were generally given to whole-class groups initially, with teachers then working with small groups or individuals, where the need arose. This is good practice. Teachers modelled the proper execution of woodworking and construction procedures at all times with a strong emphasis on best health and safety practices. The integration of subject theory with the practical elements of the subjects was a strong feature in all demonstrations observed. All practical activities that students engaged in were closely monitored with good teacher movement around the room.

Both woodwork rooms have the circular saw located in the centre of the room. It is recommended that safe operational areas are demarcated around these machines and around all other fixed machinery in the rooms. Work benches will need to be relocated away from the circular saws to ensure the proper operation of these safe zones. To improve safety awareness further, it is recommended that appropriate standard colour-coded signs be placed adjacent to all machines, indicating where the wearing of personal protection equipment (PPE) is mandatory. The display of a range of safety signage in the workshops would reinforce the students' knowledge and appreciation of health and safety issues.

Chalkboard presentations were used very effectively to focus student attention and support students' learning. The students' learning experience could be further enhanced by the use of information and communications technology (ICT). School management has expressed a commitment to supply the subject department with a data projector, as soon as resources permit. There are many advantages to using a computer and data projector to improve the presentation of lessons such as the displaying of digital photographs, video clips and bulleted notes. The use of the SolidWorks software as an aid to the design and visualisation of projects is also strongly recommended.

The development of the students' design skills formed an important element of practical classes, across all year groups, and this is good practice. The design process is challenging for students, particularly for first year students. It is suggested that assigning the students to small groups, with each group working on a design or a design modification, would be a beneficial support for students at this early stage and would foster peer learning. The group size should be reduced as student confidence develops.

The terminology associated with MTW and CS was emphasised constantly during lessons. This allows students to listen to instructions while assimilating subject-specific terminology. This good practice enhances both teaching and learning. Beaufort College participates in the School Support Programme of Delivering Equality of Opportunity in Schools (DEIS), the Department's action plan for educational inclusion. One of the main strands of this plan is the improvement of the literacy levels of students. As a support for students in both MTW and CS classes it is suggested that a key-words list is highlighted by the teacher while a topic is being covered. This list should be displayed on the chalkboard, a whiteboard or on a sheet of paper for a number of classes. These new words could be transcribed into a copy, by the students, as a further support.

It is evident that textbooks are used appropriately. Texts are used mainly as a resource for the completion of classroom tasks and student homework, thus avoiding over-reliance which can have a narrowing effect.

Good student-teacher rapport was evident during the evaluation. Most students participated well and showed enthusiasm for the work being undertaken. Students' efforts were acknowledged and affirmed and the atmosphere in the lessons observed was conducive to learning.

## **ASSESSMENT**

Students' attendance, attainment and progress are recorded by teachers. These records form the basis of reports to parents which are posted to parents following formal school assessments. Formal assessments are held at Christmas for all students and at summer for first, second and fifth year students with 'mock' examinations being set in the spring for those taking the Certificate examinations in June. The parents of students in each year group are invited to attend one parent-teacher meeting during the year. These arrangements are satisfactory.

In addition to these formal tests it is evident that teachers mark students' project work and occasionally set end-of-topic tests. Consideration should be given to the allocation of a percentage of marks, from these types of assessment, towards students' Christmas and summer test results. It should be indicated to students how these marks would be allocated and in what proportion. Such a system of accumulating marks from continuous assessment would provide an incentive for sustained effort from students.

From the observation of students' journals and copies it was clear that homework is allocated only sporadically. The monitoring of this work takes the form of dating and signing the copybooks. Homework is an important part of the learning process and supports the work done in school. It is important therefore, that homework is allocated, collected and corrected regularly. Feedback on homework in the form of written comment is also important. Copybooks used during class time should also be monitored by the teacher in a systematic way to ensure that high quality note taking and sketching is taking place at all times and by all students.

## **SUMMARY OF MAIN FINDINGS AND RECOMMENDATIONS**

The following are the main strengths identified in the evaluation:

- The time allocated to both MTW and CS for is very good with an even distribution of lessons across the week in both subjects.
- The MTW and CS rooms are bright and well maintained and provide visually stimulating learning environments for students.
- The subject teachers have attended all sessions of the programme of continuing professional development (CPD) made available through the Technology Subjects Support Service (T4).
- A good standard of teaching and learning was observed in the course of the inspection.
- There is good involvement of the technologies teaching team with co-curricular projects and good collaboration with the art department within the school.
- Planning for the individual lessons observed was very good. All learning activities were well planned and organised.
- Teacher demonstrations were clear with good integration of subject theory.

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

- Efforts should be made to display students' work in MTW and CS in a more organised way.
- The teaching team should develop agreed schemes of work, in line with syllabus requirements, for each year group.
- Key words should be displayed prominently to create a text-rich environment as a support for the development of literacy levels in the school.
- A risk and hazards analysis should be carried out for the woodwork rooms and a document drawn up that would be included within the school's health and safety statement.
- Consideration should be given to the allocation of a percentage of marks from continuous assessments, in students' Christmas and summer test results.

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.