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

St Joseph’s College
Borrisoleigh, County Tipperary
Roll number: 65241N

Date of inspection: 09 March 2011
REPORT
ON
THE QUALITY OF LEARNING AND TEACHING IN CONSTRUCTION STUDIES AND MATERIALS TECHNOLOGY (WOOD)

SUBJECT INSPECTION REPORT

This report has been written following a subject inspection in St Joseph’s College. It presents the findings of an evaluation of the quality of teaching and learning in Construction Studies (CS) and Materials Technology (Wood) (MTW) 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 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 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

Appropriate provision is made for CS and MTW to be offered as optional subjects to all students in senior cycle and junior cycle respectively. These subjects are part of the very good range of technology subjects on the school’s curriculum, which also includes Technical Graphics and Technology in junior cycle, and Design and Communication Graphics and Technology in senior cycle. CS is also offered in the optional Transition Year (TY) programme.

Use of information and communication technology (ICT) in teaching and learning in the subjects is very good. The facilities provided include teachers’ laptop computers and data projectors and a computer room with a full complement of personal computers, on which the computer-aided design programme SolidWorks is installed. Other facilities provided for teaching the subjects are of a good standard. Teachers have been facilitated in attendance at relevant continuing professional development (CPD) courses including those provided through the Technology Subjects Support Service, T³.

Timetabling of CS and MTW provided a very good distribution of lessons across the week for each class ensuring continuity of contact with the subjects for the students. There was also an appropriate allocation of double-period lessons to facilitate the completion of practical work.

The time allocated to the teaching of MTW was relatively generous in second year and third year where three single-period lessons and one double-period lesson were timetabled. In first year, however, where two single-period lessons and one double-period lesson were timetabled, the teaching time allocated was inadequate. Lessons in the weekly timetable were of thirty, thirty-five or forty minutes duration with an average length of thirty-four minutes. The time allocated to MTW in each of the three years of junior cycle should be close to the equivalent of four lessons of forty minutes duration.
The time allocated to the teaching of CS in fifth year and in sixth year was also too low. Although three single-period lessons and one double-period lesson were timetabled, the double-period lessons were of just sixty-five minutes and seventy minutes duration respectively. It is recommended that the time allocated to CS should be close to the equivalent of five forty-minute lessons in fifth year and in sixth year.

The teachers are deployed equitably to teach the technology subjects for which they are qualified, each teaching mixed-ability classes in junior cycle and in senior cycle. A good range of resources, including equipment and materials, is made available for teaching the subjects. These resources are well managed and appropriate care is taken with regard to their maintenance and updating as required.

One of the woodwork rooms is of a very high standard. This purpose-built room in the main school building provides a bright, well-ordered learning environment and includes a centralised dust-extraction system. Space for the second woodwork room has been provided by removing the partition walls between a number of classrooms in an older section of the school buildings. At the time of the inspection, this room was adequate for the classes observed, both of which were relatively small. The room was tidy and well organised. Tools and equipment were neatly and securely stored. Adequate dust-extraction for the woodwork machines was provided by means of local units. An adjoining room had been provided for the storage of students’ coursework projects. While progress has been made in providing a suitable learning environment in this room, some work remains to be done. The positioning of the wood-preparation machines directly inside the entrance to the room used by students is not ideal. It is recommended that this layout be examined as part of an overall safety audit of the room. School management proposed that the room would be enlarged and that some changes to the layout would be undertaken. These proposals should be acted upon as a matter of urgency.

The school’s safety statement, as presented to the inspector at the time of the inspection, was a general document stating the requirements for effective management of occupational health and safety in the school. This statement did not contain specific information relating to the woodwork rooms. The principal stated that the school was about to undertake a revision and upgrade of health and safety documentation. This revision was to be based on the advice of the Health and Safety Authority (HSA) provided in its documentation issued to schools, a copy of which the principal had to hand when interviewed. It is of the utmost urgency that this mandatory work, which includes a safety audit of the woodwork rooms, be undertaken immediately. The safety statement should then be reviewed annually and, as the need arises, due to any changes in circumstances.

There was evidence of the involvement of teachers in a safety committee, and generally in matters pertaining to the management of health and safety. This involvement, in line with good practice, should be maintained and developed further as the process of reviewing provision for health and safety proceeds. Specific health and safety policy, practice and procedures relating to the woodwork rooms should also be informed, as appropriate, by the Review of Occupational Health and Safety in the Technologies in Post-primary Schools published by the Department of Education and Skills and the State Claims Agency.

A good level of care and attention was observed in relation to the active management of health and safety during lessons. Standard signage was in evidence as was the display of appropriate rules for the woodwork rooms. Further improvement can be achieved by extending the use of safe operational areas around machines and by providing appropriate instructional signage to clarify
the rationale for demarcating these areas and the implications for students’ movement within the rooms. The use of instructional signboards covering the safe use of machines, such as the lathe and mortising machine, should also be increased.

Access to MTW is facilitated for all students. In first year, the newly introduced process of subject selection will provide students with an initial open choice prior to entry. The students’ responses will then be used to design the most appropriate option bands, from which the students will make final choices. This collaborative approach to deciding subject-option bands follows good practice and the introduction of a similar process in senior cycle is recommended.

Appropriate procedures are in place for the support of students with regard to subject choice. Open days are provided where new students are addressed by the principal and school management. These students are also facilitated with tours of the specialist rooms, including the woodwork rooms, to assist them in making subject choices. Students, about to decide subjects for senior cycle, are met by the principal and the guidance counsellor who outline the choices to be made. The guidance counsellor also arranges one-to-one meetings with students to provide individual support for subject choice. Both subjects are taught in a mixed-ability setting and students appropriately choose the level at which they will sit the certificate examinations in consultation with their teachers.

PLANNING AND PREPARATION

Subject-department planning for the technologies is facilitated by the provision of time for a department meeting each term. Joint planning for these related subjects, including CS and MTW, is in line with good planning practice. The meetings are appropriately planned and recorded. There is a co-ordinator of the technologies who is appointed by the principal. Co-ordination is effective in arranging for the acquisition and sharing of resources and the further development of the subject department. Much of the work of planning and co-ordination takes place in a less-formal setting and the teachers concerned commendably work closely together on a day-to-day basis. It is urged that the role of co-ordinator be rotated among the teachers of the technologies, perhaps on an annual basis, to further facilitate collaboration, to further develop the planning skills of all teachers of the subjects and so to provide for continuity in the subject department.

The subject plans for CS and MTW provide a very good basis for further development of planning documentation. The plans contain programmes of work that are consistent with the respective syllabuses. Further development of a number of areas of the plans, to be undertaken collaboratively, should include the linking of the most effective active teaching methodologies to specific subject content. The specific strategies adopted for meeting the additional educational needs of students in CS and MTW lessons should also be described. The plans should detail the measures taken to further the students’ literacy and numeracy skills. The knowledge, skills and other learning outcomes that the students are expected to acquire in each year of the respective courses should also be identified in the subject plans.

Evidence of good individual planning was observed. Lessons followed programmes of work that were coherent and reflected the requirements of the syllabuses. The work planned for lessons was in line with the students’ abilities.

In most lessons, a very good, well-planned approach to student-project design was in evidence. In a first-year lesson, teacher-prepared worksheets were used to prompt students towards individual designs for an artefact. Well-planned pair work was used and students were given opportunities to
make positive suggestions for an improvement to a peer’s design ideas. In a third-year lesson, where students were involved in the realisation of coursework projects, student preparation for completion of the projects had been well planned and each student worked from individual working drawings produced as part of well-structured investigations.

One lesson, in fifth year, involved the completion of a certificate-examination practical skills test. Although the examination piece in question was a functional bookstand, there was effectively no element of student design or creativity involved in its realisation. An opportunity was lost in this instance to involve students in more creative, design-based activity that would provide a valuable learning opportunity, particularly at that stage of the CS course. Care should be taken to avoid an over-reliance on examination material, in this context, or an approach that is too examination led.

It was clear in all lessons that the teachers had prepared thoroughly. The equipment and materials needed for class were on hand and sufficient appropriate teaching resources had been prepared as needed.

**TEACHING AND LEARNING**

The teaching observed was of a high standard throughout. Each of the lessons had clear aims that the teacher shared with the students at the outset, in line with good educational practice. It is suggested that expected learning outcomes should be shared more specifically with students, in addition to outcomes in terms of the work expected to be completed. This should help students to take more responsibility for, and be more aware of, their own learning.

The lessons were carefully and appropriately structured and were taught at a pace appropriate to the subject matter, the available time and the abilities of the class group.

Practical skills demonstrations by the teachers formed a prominent part of each of the practical lessons. These demonstrations were of a high quality and displayed a very high level of competence. Occasionally the timing of demonstrations should have been linked more directly to the introduction of new processes and it is recommended that peer demonstration be used, where appropriate, to reinforce practical skills development. Demonstration to a group of students rather than to a whole class should also be considered in this context, where students from the group could subsequently demonstrate to another group allowing the teacher to act as mentor.

Students’ work was generally differentiated appropriately when they were involved in individual project design and realisation, as in the case of certificate examination coursework. This practice is in line with the subject department’s policy. In instances where students had engaged in whole-class group design, however, all students undertook the realisation of the same artefact. Differentiation within these design projects should also be addressed to provide appropriate challenge for each student in line with his or her ability. This could be achieved by providing for a small number groups each agreeing a design to suit their shared abilities more closely.

Classroom management was very effective in each of the lessons, supported by effective classroom routines and clear teacher expectations and instructions. On rare occasions, when correction of behaviour was needed, this was achieved with appropriate discretion and sensitively.

The teachers generated and maintained enthusiasm for the work being undertaken and the consequent enjoyment of the students of their work was clear. Positive relationships with students
were nurtured by teachers through shared interest in the subjects. The learning environment in both woodwork rooms, further enhanced by the display of subject-related materials, was conducive to learning.

The students were fully engaged in each of the lessons and very good learning was taking place. Where engaged in the realisation of their own design projects, third-year students displayed clear knowledge and understanding of the materials, processes and underlying principles of the design. In a first-year lesson, students, engaged in design work, showed a high level of originality and understanding of the process being followed having already grasped the principles involved. In general, students had made appropriate progress. They were actively engaged in their own learning and they communicated this in their contributions to lessons and when answering questions.

**ASSESSMENT**

Good practice is followed with regard to assessment in the subjects. In line with policy in the school, formal in-school examinations are administered at Christmas and in summer. Average continuous-assessment marks are combined with the examination marks in CS and MTW. Progress has been made towards standardised procedures regarding this combination of marks. Such standardisation is consistent with good practice and with the assessment modes used in the certificate examinations. As the standardised procedures become established, students should be made aware of them, including awareness of the assessment criteria being used. Regular opportunities should then be availed of to provide students with feedback regarding their continuous-assessment outcomes and the expected impact on their end-of-term results.

Good quality formative assessment was observed when the teachers worked closely with students in a one-to-one setting in practical lessons. This interaction was affirming of the students’ efforts and was successfully used to encourage further improvement and to monitor and assess students’ progress. In one lesson, students were invited to rate their own work, in this case the quality of a challenging saw cut. This led to a short discussion and provided opportunities for further affirmation of the students’ efforts. This was very good self-assessment practice and it should be applied more widely as the opportunity arises.

Teachers keep appropriate records of students’ attendance, homework, continuous assessment and attainment in tests. This information is shared at parent-teacher meetings and in written school reports. The students’ journals provide a constant communication channel with parents. It is urged that the journals be used particularly for positive affirmation and reinforcement of students’ success as often as possible.

**SUMMARY OF MAIN FINDINGS AND RECOMMENDATIONS**

The following are the main strengths identified in the evaluation:

- The level of care and attention in relation to the active management of health and safety during lessons was observed to be high.
- An open, collaborative approach around deciding subject-option bands in junior cycle has been introduced.
- The range of resources available for teaching the subjects is good. The resources are well managed and updated as required.
• Appropriate joint planning is undertaken for the technology subjects including CS and MTW.
• The subject plans contain programmes of work that are consistent with the respective syllabuses and provide a very good basis for further development.
• Teaching and learning was found to be of a high standard throughout the inspection visit.
• Good quality formative assessment was observed in practical lessons.

As a means of building on these strengths and to address areas for development, the following key recommendations are made:
• The teaching time allocated in first year and in fifth and sixth year should be increased.
• While progress has been made in providing a suitable learning environment in the second woodwork room, the work that remains to be done regarding its size, layout and standard of finish should be completed.
• A review of health and safety, including a safety audit of the woodwork rooms, should be undertaken as a matter of utmost urgency.

Post-evaluation meetings were held with the teachers of Construction Studies and Materials Technology (Wood) and with the acting principal at the conclusion of the evaluation when the draft findings and recommendations of the evaluation were presented and discussed.

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Appendix

School Response to the Report

Submitted by the Board of Management
Area 1  Observations on the content of the inspection report

A very fair minded and balanced report.
It is a pleasure to report that all the refurbishment work has been completed in the old Woodwork room under the Summer scheme thanks to the Dept.

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

Classes are now all of 40 minutes duration due to the adverse impact of the redeployment scheme. It must be stressed that each year has three forty minute classes and a double class of eighty minutes.