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

Carrigallen Vocational School
Carrigallen, Co. Leitrim
Roll number: 71540J

Date of inspection: 1 March 2010
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 Carrigallen Vocational School. 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 and the teachers. The board of management was given an opportunity to comment in writing on the findings and recommendations of the report; a response was not received from the board.

SUBJECT PROVISION AND WHOLE SCHOOL SUPPORT

Carrigallen Vocational School currently caters for 231 students, 114 males and 117 females. It offers a good range of technology subjects to its students. Technical Graphics, Metalwork and Materials Technology Wood (MTW) are offered as optional subjects for the junior cycle programme and Design and Communications Graphics, Engineering and Construction Studies (CS) are offered as optional subjects for the senior cycle programme. In the current school year 2009/10, a new system has been introduced whereby first-year students sample all the optional subjects which the school has to offer for the full duration of the year. Previous to this, students made their subject option choices before entry into the school. In addition to experiencing the available subjects, students are supported by subject teachers, the guidance counsellor and the senior management team when they make their optional subject choices at the end of first year. Parents are kept informed by means of an information evening. While the new arrangements for students to sample new subjects is commended the scheduling of MTW for only two class periods per week in first year results in an inadequate overall time allocation for teaching and learning the subject over the junior cycle years. It is desirable that MTW should be timetabled for an overall allocation equivalent to four periods per week over the three years of junior cycle.

Students of both genders are equally represented in the school yet the number of females studying MTW and CS is low. Management expressed the view that the newly introduced system of sampling all the optional subjects in first year would support an increase in female participation in...
MTW and subsequently in CS. Management are urged to keep the situation under review and to seek other ways to encourage more females to study the subject. As a first step a survey of female students’ opinions of the subjects may provide some insights. Furthermore the option bands and timetabling arrangements for the subjects should be analysed to ascertain if these are contributing factors.

Students entering senior cycle are given an open choice of available subjects. Parents and students are well supported by subject teachers, the guidance counsellor and management when making optional subject choices. Option bands based on these choices are then developed in line with good practice.

All MTW and CS classes are of mixed ability and students sit the certificate examinations at the level appropriate to their abilities. Time allocation for the subjects is good across all year groups, except first year. The provision of double and single periods caters adequately for practical work, project work, drawing and theory.

The subjects are taught in a room that is both well, equipped and well maintained. This room has recently been extended to include a wood-preparation area which now houses many of the machines that were previously in the workshop. In addition to this, a dust extraction system, a ceiling mounted data-projector, new workbenches and an extensive set of new hand tools have recently been purchased for the room. Both senior management and the subject teaching team are to be commended for their ongoing attention to the upgrading of facilities for the teaching and learning of the subjects.

The MTW and CS department comprises of two fully qualified teachers. At present all the construction studies lessons are taught by the same teacher. This arrangement is not good for the development or maintenance of capacity in the subject department. It is recommended that efforts be made to spread the teaching of the subjects more evenly amongst the teaching team. This would facilitate continuity with classes moving from junior to senior cycle and would encourage better collaboration within the subject department when planning for the subjects.

Opportunities for continuing professional development (CPD) have been fully availed of by the teachers of MTW and CS. Both teachers have attended all subject-specific training provided by the Technology Subject Support Services (T4). Furthermore both teachers have attended night classes on the use and integration of information and communication technology (ICT) and computer aided design (CAD) into the classroom. Management and staff commitment to this work is highly commended.

**Planning and Preparation**

The subject department meets formally at least twice during the school year. These formal meetings are supplemented by frequent informal meetings. A subject co-ordinator has been appointed and the role of co-ordinator is rotated amongst the subject teachers. Records of meetings are retained in subject planning documentation. These arrangements work well in the school and are highly commended.

A subject department plan has been developed for CS and this plan follows the School Development Planning Initiative (SDPI) template. Within this document, schemes of work have been created in line with syllabus requirements and are broken down into two-month bodies of
work. This enables accurate tracking of progress through the scheme throughout the year. As a next step in the development of these plans, it is recommended that for each topic, the planned learning outcomes for students be listed. Reference should also be made to the methodologies to be used, the resources available and the proposed methods of assessment. It is recommended that a similar approach be adopted with the MTW planning documentation.

As part of the planning of revised programmes of work, in particular at junior cycle, it is recommended that a greater number of smaller, more diverse design projects be identified. This would increase the frequency of the students’ involvement in the full cycle of the design process. The subject department should aim to reduce the number of occasions when the whole class produce identical projects. The development of the students’ ability to modify designs or to produce individual solutions to a set design problem should be fostered at an early stage. The use of group work during this vital area of student learning can be a beneficial support and can help to improve student confidence.

Students’ outcomes in the Leaving Certificate are analysed and compared to the national averages each year. The analysis shows a high uptake by students of the higher level paper. This analysis provides a valuable insight to the standing of the subject and it is recommended that this practice be extended to include Junior Certificate results. These analyses can be used to inform future planning for the subjects.

In the long-term planning for the subject consideration should be given to the proper displaying of student project work. This would promote the work of the department, would act as a motivation for the students and would provide a focus of interest for visitors to the school.

The observation of good safety practices and the mandatory use of personal protective equipment (PPE) was a strong feature of all lessons observed during the inspection. In order to build on these good practices it is recommended that the teaching team carry out a risk and hazards analysis of both the teaching area and the wood-preparation area. A document should be drawn up which identifies all significant hazards and lists control measures put in place to reduce risks. Furthermore the demarcation of safe operational areas (SOAs) around machines and the display of safe-use rules and standard warning signage should be carried out urgently. When compiling this document teachers should be guided by the Review of Occupational Health and Safety in the Technologies in Post-primary Schools which is available for download from the Department of Education and Skills website. Further useful safety resources and information are available on the Technology Teachers Support Services (T4) website (www.t4.ie).

All lessons observed during the evaluation were well planned. Any classroom resources needed had been prepared in advance and this ensured that progression through the lessons was maintained at a suitable pace. Lesson planning was appropriately related to the programmes of work set out for each subject area and for each year group.

**TEACHING AND LEARNING**

Lessons observed in 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. Various forms of questioning techniques were used at this stage to revise previous learning, to introduce new topics and to focus student attention. These included an appropriate mix of higher order, group and individual questions. These good practices are commended.
Good classroom routines were evident during all lessons visited. Students were quick to set up tools and work pieces at the outset of the lesson with procedures at the conclusion of the lesson being equally well ordered. These routines ensure that the learning environment was well organised, managed and safe.

At the time of the inspection third year MTW and Leaving Certificate CS students were engaged in the completion of project work for submission to the State Examinations Commission. Teachers were expertly guiding students through the design and make process in a wide variety of project types. The smooth management and monitoring of these tasks ensured that all students were actively learning.

Teachers used ICT extensively during their presentation of lessons. During one junior cycle lesson observed the teacher had modelled the current class project using the SolidWorks software. The 3D computer representation was used to very good effect to emphasise design features of the project and to explain assembly techniques. In another lesson observed the data projector was well used to display good quality photographs of various roof types to a CS class. It is clear that the very effective use of ICT to support student learning is well established.

Care was taken by teachers to use and emphasise the correct terminology associated with MTW and CS. Students’ use of correct terminology indicated that this was a very successful element in teaching and learning.

The atmosphere in each of the lessons visited was positive and encouraging. There was clearly a good rapport between teachers and students. This was sustained by constant teacher movement amongst the students. Students were well behaved throughout and there was a clear mutual respect between teachers and students.

**ASSESSMENT**

Records of student attendance and attainment are recorded systematically in teachers’ diaries. These are used to accurately inform parents of student progress throughout the year. This progress is communicated to parents through the student journal, school reports and parent-teacher meetings.

Students sitting certificate examinations receive a progress report at the end of October. These students also sit Christmas tests and mock examinations in early spring. Two parent-teacher meetings are held per year for students at these levels. Formal examinations are held twice a year for all other year groups, reports are posted home and parents are invited to attend one parent-teacher meeting during the year. These arrangements are satisfactory.

There is continual assessment of class work and students’ projects in MTW and CS. Feedback to students can be oral or in the form of a written comment. It is recommended that a more formal approach is adopted by the subject teachers whereby the outcomes of continual assessment are combined with formal test results. The aggregation of results from student practical work and formal written tests is compatible with the aims and objectives of the respective subject syllabuses. Students should be made aware of how these marks are allocated and in what proportion. Such a system would provide an incentive for sustained effort from students.
Good practice was evident in the regular assignment of homework to students. Homework is an important element of the learning process as it supports the work students do in the classroom while also acting as a valuable assessment tool for teachers. In addition to the correction of errors, teachers should also provide written feedback on the quality of answers, diagrams and annotations. This would allow work of a high quality to be purposefully affirmed while also providing an opportunity for developmental feedback to students.

**SUMMARY OF MAIN FINDINGS AND RECOMMENDATIONS**

The following are the main strengths identified in the evaluation:

- Both senior management and the subject teaching team are to be commended for their continuous work towards the upgrading of facilities for the teaching and learning of the subjects.
- Teachers have attended all subject specific training provided by the Technology Subject Support Services (T4). Both teachers have attended night classes on the use and integration of ICT and CAD into the classroom.
- A subject co-ordinator has been appointed, meetings are held regularly and minutes are kept.
- A high quality of teaching and learning was observed in all lessons.
- Good classroom routines were evident ensuring that the learning environment was well organised, managed and safe.
- Teachers used ICT very effectively to support student learning.
- The terminology associated with MTW and CS was well integrated into lessons and well assimilated by the students.
- There was a very good rapport evident between students and teachers.

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

- Improvements are recommended to the MTW and CS plans. The plans should include the expected learning outcomes for each topic as well as the methodologies to be used, the resources available and the proposed methods of assessment.
- A greater number of smaller, more diverse design projects should be identified in order to increase the frequency of the students’ involvement in the full cycle of the design process.
- A document should be drawn up by the subject department which identifies all significant hazards in the workshop and wood-preparation area and lists control measures to be put in place to reduce risks.
- The demarcation of safe operational areas (SOAs) around machines and the display of safe-use rules and standard warning signage should be carried out urgently.
- Consideration should be given to incorporating continual assessment marks from project and portfolio work into Christmas and end-of-year grades.

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

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