Department of Education and Skills

Subject Inspection of Materials Technology (Wood) and Construction Studies

REPORT

Balbriggan Community College
Balbriggan, Co. Dublin
Roll number: 70010V

Date of inspection: 7 March 2011
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 Balbriggan Community College. 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 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 subject 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

Balbriggan Community College participates in the Delivering Equality of Opportunity in Schools (DEIS) action plan. It currently caters for 573 students; 436 males and 137 females. Materials Technology Wood (MTW) is offered as an optional subject for the junior-cycle programme and the uptake of the subject is high. The strategies to support subject choice for students are good. Students make their choice of optional subjects prior to attending school in first year. Assistance provided for making subject choices includes individual advice sessions and an open evening for prospective students and their parents. Students are given an open choice of available subjects and option bands based on students’ choices are developed thereafter. The movement of students to different option subjects within a band is facilitated, resources permitting, up to the mid-term break in October.

Construction Studies (CS) is one of the optional subjects offered for the Leaving Certificate (LC) programme. Students preparing to enter senior cycle are offered an open choice of optional subjects with option bands then developed to best accommodate these choices. Support for parents and students is provided at an information night where advice is given by subject teachers, programme co-ordinators and the guidance counsellor. The Transition Year (TY) programme is not available in the school at present. A sub-committee of the teaching staff is currently researching the need and the value of such a programme for the students in Balbriggan Community School and this valuable work is commended.

All year groups receive an appropriate time allocation for MTW and CS. The subject periods are evenly distributed throughout the week with an appropriate allocation of double-class periods. Classes are of mixed ability and access to higher and ordinary level is accommodated within class groups.
The subject department has two rooms available to it for the teaching of the subjects. Both of these rooms are bright and well maintained with good attention paid to the storage of tools. One of these rooms contains a wide variety of interesting and creative students’ projects which are displayed to good effect. Numerous photographs of project work completed over the past number of years is also well displayed. This room provides a stimulating learning environment for students. The second room has recently been extended and refurbished. The subject department has plans to develop this room to provide an equally rich space for the teaching and learning of the subjects. The commitment of teachers to the development of their classrooms deserves particular acknowledgement.

A desktop computer and a digital projector are provided in both rooms to aid in the presentation of teaching material. Students can also avail of fourteen laptop computers which are loaded with SolidWorks and have internet access. These information and communications technology (ICT) facilities are used to good effect, particularly when students are producing projects and project write-ups for the certificate examinations.

The subjects are well resourced with machines, portable power tools and hand tools. Resources including wood and other consumable materials are supplied in response to the needs of the department. These arrangements are reported to be working effectively. Dust extraction facilities are good with the larger machines ducted to a central system.

One of the teachers has recently graduated and has attended subject-specific in-service provided by the Technology Subjects Support Service (t4) since joining the school. The other teacher has attended all sessions of this in-service over the past number of years. Management is commended for supporting, encouraging and facilitating the in-career development of the teaching team.

**PLANNING AND PREPARATION**

Formal subject planning meetings are held once per term with records of meetings maintained and copied to management, as is good practice. A subject co-ordinator has been appointed and this role is rotated among the subject teachers. This practice provides teachers with experience of subject planning and co-ordination and so enriches the expertise available within the department.

There was good evidence of planning for individual lessons. A wide range of high quality resources have been generated by the subject department. Most of these resources take the form of ICT presentations. Other resources include a set of DVDs on building construction and extensive paper based notes. Such resources contribute greatly to the delivery of lessons in an interesting and motivational manner.

Separate subject department planning folders were presented for MTW and CS and these indicate topics to be covered with year groups during the course of their studies. These programmes of work need to be further developed. It is recommended that proposed learning outcomes for the students, for each unit of study, be identified along with details on how the achievement of these learning outcomes could be assessed. Reference should be made to the most successful teaching methodologies to be used and the resources available to teachers when delivering each topic. Electronic presentations, worksheets, handouts, digital photographs and video clips should all be referenced in the plans. The discussion generated in formulating such schemes of work will assist in cataloguing the resources already available and will help to identify areas in need of greater attention. The subject plan should also include reference to student access to the subject, class
organisation and arrangements for including students with special educational needs (SEN). Further information on subject department planning is available on the School Development Planning Initiative (SDPI) website (http://www.sdpi.ie/subject_planning.html).

The involvement of the teaching team in cross-curricular activities such as the Nest Box Project for Birdwatch Ireland, the Make a Book Project as part of the school’s Junior Certificate Schools Programme (JCSP) and the production of animal shaped cut-outs for the local crèche is highly commended. There was also evidence of links with the art, home economics and history departments on the production of students’ projects.

The subject department has developed a very detailed, high quality, safety document which identifies all significant hazards associated with the woodworking machines and electric hand tools. As is good practice, a safety audit has recently been carried out by the subject teachers. The results of this audit were recorded on checklists extracted from Guidelines on Managing Safety and Health in Post-Primary Schools which was recently distributed to schools by the Health and Safety Authority (HSA). It is recommended that the completed checklists be dated.

The subject teachers are commended for developing and displaying machine-specific safe-use rules for some of the machines in the workshops. These are displayed adjacent to the appropriate machines. This good practice should be extended to include all machines used by students. Safe operational areas (SOAs) are demarcated around some machines. Marking of the SOAs around the other machines has been postponed whilst waiting for suitable floor paint. In the interim, it is essential that SOAs be immediately marked around all remaining machines using floor tape. The rationale for such SOAs and the implication for movement and behaviour in the vicinity of machines should be explained to students.

As is good practice, students’ outcomes in the certificate examinations are analysed every year and compared to national norms. This analysis, along with the marking schemes and the Chief Advising Examiners’ reports should be used by the subject teachers to inform future planning for the subjects. It is suggested that a further analysis of these results should be carried out to identify trends in uptake and performance by students within the school context.

**TEACHING AND LEARNING**

Four lessons, three of which were double periods, were observed during the course of the evaluation. All lessons had clear learning outcomes which were shared orally with the students at the outset. To further build on this good practice teachers could write the aims of the lesson on the chalkboard. These can be used to keep the lesson on track and, towards the end of the lesson, to reflect on the progress made.

Good routines were evident in the practical lessons observed. Little time was lost during the setting up and clearing away of tools, equipment and project work pieces. In all cases the room was left in good order by the students. Such routines place the responsibility for maintaining an ordered learning environment on students and also promote good work practices.

The most frequently used teaching method in the lessons observed involved demonstrations to the whole class group, with teachers then demonstrating to small groups or individuals as the need arose. This is good practice. Demonstrations were used to model the proper execution of woodworking procedures with a strong emphasis placed on best health and safety practices at all times. In some instances students were invited to participate in these sessions, which they did
willingly. Subject theory and terminology were carefully integrated into these instruction times. This enhanced both teaching and learning. As a support for the development of student literacy it is recommended that the terminology encountered in this way be written on the chalkboard or a sheet of paper and remain in view for the duration of the lesson. Students could transcribe these words into a copybook at the end of the lesson as a further support.

In spite of the fact that the design process does not appear in detail in the planning folders there was consistent evidence that the principles involved are followed in practical lessons. For example, projects completed by first-year students are identical in overall design but students are encouraged by the teacher to modify and personalise their own work. Through second year and third year, teacher input into the design of projects solutions decreases as student input and confidence in this area increases. This gradual introduction of the design process into project work is commended, as initially, students find this aspect of the syllabus very challenging.

It was reported that first year and second-year students are asked to process the written element of a design brief for some of the larger projects completed during the year. This provides valuable experience and support for students. It would be important that such work follow the exact criteria laid down by the State Examinations Commission for the Junior Certificate project brief to enable students to become familiar with the various chapter headings and what should be contained therein.

At the time of the inspection, students were engaged in the completion of project work associated with the certificate examinations. Teachers were expertly guiding students through this process with all students actively engaged in their work. A wide variety of activities were being facilitated and it was evident that teachers were organising, managing and monitoring this process very well.

During a theory lesson observed, appropriate use was made of ICT to present sketches and concise notes. Care should be taken when asking students to copy down such sketches that the difficulty level of the sketch matches the ability of the students. The ability to produce neat, well presented, freehand sketches forms an important element of the theory examinations at both junior and senior level. It is suggested that the subject department should spend more time on the development of students’ sketching skills. Good resources for the teaching of sketching are available from the t4 website.

Classroom management was effective and was conducive to a safe, well ordered and participative learning environment. The good rapport between the students and teachers encouraged a relaxed, yet productive classroom atmosphere. Teachers’ obvious enthusiasm for the subjects generated a similar enthusiasm from the students.

ASSESSMENT

Students’ attendance, attainment and progress are recorded systematically in teachers’ diaries. These records are used to identify trends in students’ achievement, to inform future teaching strategies and to address the needs of individual learners. They also form the basis of reports to parents which are sent home following formal school assessments.

All year groups have class based examinations at Christmas. Students in certificate examinations classes sit “mock” examinations in spring. Other year groups also have examinations at this time and at the end of the school year. The parents of students in each year group are invited to attend one parent-teacher meeting per year.
Each practical project produced in MTW and CS is assessed on completion. These assessments are aggregated with results achieved in theory papers. This combining of continuous assessment with formal written test results is very good practice and is consistent with the assessment modes provided in the respective subject syllabuses. To further clarify this system of assessment it is recommended that the weighting of marks allocated to practical work be agreed by the subject teachers. Students should be kept aware of how these marks are allocated and of their progress at any given time. Such a system would act as an incentive for students to maintain a sustained effort throughout the school year.

During the evaluation a sample of students’ copybooks was examined. These contained appropriate levels of subject material and, in most instances, were well maintained. Student journals indicated that homework was being assigned. To help maximise the value gained from written class work and homework the teacher should provide written feedback to the students on the quality of answers, diagrams and annotations. In keeping with assessment for learning (AfL) principles such feedback should be both affirming and developmental in nature.

**SUMMARY OF MAIN FINDINGS AND RECOMMENDATIONS**

The following are the main strengths identified in the evaluation:

- The timetable provision for the subjects is good and the subjects are well resourced.
- The display of a wide variety of interesting and creative student projects in one of the rooms provides an exciting and stimulating learning environment for students. The subject department has plans to develop the second, recently refurbished room, in a similar fashion.
- The subject department has generated a wide range of high quality teaching resources.
- The teaching team is involved with co-curricular projects and there is good collaboration with other subject departments within the school.
- A safety audit has been carried out recently and this is supported by detailed health and safety documentation.
- The teaching and learning observed was very good.
- The good rapport between the students and teachers produced a positive classroom atmosphere which was conducive to learning.
- Marks awarded to students through continuous assessment are aggregated with results achieved in formal written examinations.

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

- Department plans should follow the SDPI template. The schemes of work within these plans should be modified to give details on student learning outcomes for each topic as well as teaching resources, methodologies and assessment.
- As a support for literacy, any terminology encountered during a lesson should be written and displayed on the chalkboard or as a poster.
- There should be an increase in the amount of written feedback provided to students and this feedback should be both affirming and developmental in nature.

A post-evaluation meeting was held with the teachers of Materials Technology (Wood) and Construction Studies and with the principal at the conclusion of the evaluation when the draft findings and recommendations of the evaluation were presented and discussed.

*Published October 2011*