

**An Roinn Oideachais agus Scileanna**

**Department of Education and Skills**

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

**Pobalscoil na Tríonóide  
Youghal, County Cork  
Roll number: 91513S**

**Date of inspection: 22 October 2009**



**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 CONSTRUCTION STUDIES**  
**AND MATERIALS TECHNOLOGY (WOOD)**

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**SUBJECT INSPECTION REPORT**

This report has been written following a subject inspection in Pobalscoil na Tríonóide. 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 the subject teachers.

**SUBJECT PROVISION AND WHOLE SCHOOL SUPPORT**

Appropriate provision is made for MTW and CS within the curricular programmes provided in the school. The school provides MTW for all students in first year and gives students the option of studying this subject in second year and third year. Each student taking the Transition Year (TY) programme studies a module of CS. The subject is provided as an option for all students in Leaving Certificate and in the Leaving Certificate Vocational Programme. Graphics and Construction Studies is not currently provided as a vocational specialism in the Leaving Certificate Applied programme.

The use of information and communication technology (ICT) in teaching and learning within the technologies has been greatly enhanced following the introduction of the new syllabus in Design and Communication Graphics (DCG). This has had a positive effect on the teaching of MTW and CS in the school. Appropriate hardware and software is provided to support and actively promote good practice in the use of ICT. The woodwork rooms, wood-machining area and stores provided for the teaching of the subjects are well appointed, tidy and carefully maintained. Care and attention has been paid to the fitting out and commissioning of the facilities including the installation of a centralised dust-extraction system. Management and the subject teachers are commended for their part in this important work.

Continuing professional development is valued and encouraged. The teachers of MTW and CS, together with the teachers of the other technologies, have been supported in attending in-service sessions provided through t<sup>4</sup>, the Technology Subjects Support Service. Whole-school CPD is also provided and this, among other benefits, has facilitated and encouraged the development of subject department structures.

Timetabling of MTW and CS is very good. Appropriate time is allocated for the teaching of the subjects in each programme. Four periods per week are allocated to MTW in second year and third year, arranged as one double lesson and two single lessons. In first year this time allocation is provided for half of the year, students alternating with Art for the other half of the year. Students are provided with three periods of CS per week for half of the year in TY. These periods are arranged to provide one double lesson and one single lesson. CS is allocated five periods per week in senior cycle, arranged as one double lesson and three single lessons. In all cases lessons are appropriately distributed across the week.

Each of the four teachers of MTW and CS is deployed in rotation to teach each of the subjects and they also teach Technical Graphics (TG) and DCG. This is good practice and supports sustainability, collaboration and collegiality within the subject department and across the technologies in general.

Arrangements for the maintenance, management and enhancement of resources and facilities are very good. The subject department is allocated an annual budget and it plans collaboratively and very effectively for the most efficient use of this budget. School management, through the framing of the timetable and with the input of the subject teachers, arranges for the most effective use of the specialist rooms used for teaching the subjects. Very occasionally, in the course of the week, theory lessons are taught in the woodwork rooms; this only happens when timetabling constraints makes it unavoidable. It is urged that further efforts be made to ensure that theory lessons take place in the most suitable setting in all cases so that students derive the greatest possible benefit from the high quality teaching materials and lesson preparation of their teachers.

The health and safety documentation of the subject department is very well structured and has been completed to a high standard. The machines have been professionally assessed for safety and the outcome of this assessment is included in the documentation. The risks attendant on each machine are dealt with clearly and the presentation is accessible and compelling. The subject teachers are to be complimented for their part in this very good practice. This health and safety information is included in the school's safety statement.

Access for all students to MTW and CS is facilitated by management within option-subject bands in junior cycle and senior cycle. In line with good practice, these subject-option bands are generated in response to the expressed subject preferences of students.

Information regarding the subject choices faced by students is made available in a thorough, fair and transparent manner and this is commended. The strategies adopted to inform parents and students with regard to subject choice are effective and include information evenings for junior cycle and senior cycle aimed at first-year and fourth-year students respectively. Students are encouraged to confer with teachers of relevant optional subjects and with their assigned guidance counsellor. Third-level colleges and other relevant bodies are invited to present information at careers evenings held every second year in the school. In addition, it is good practice that students are facilitated by the school in gaining personal experience of the optional subjects in preparation for making subject choices. It is particularly good practice that management and staff are actively engaged in developing the most suitable means of providing experience for students of each optional subject before making choices in first year. Since the opening of the amalgamated school three different approaches have been tried. This focus on arriving at the arrangement which best meets the interests of the students and the particular circumstances of the school is commended. A review of the outcomes of the past three years should inform decisions regarding how best to provide student exposure to optional subjects in the coming years.

The uptake of MTW by female students, particularly in second year, shows a high level of success in the school's approach to achieving gender equality in the subject. This is commended. The foundations of this success should be identified and built on with a view to continuing the trend in junior cycle and emulating it in increased senior-cycle uptake of CS.

In line with good practice, an integrated approach is taken to meeting the additional needs of students in MTW and CS. Classes are organised on a mixed-ability basis. Appropriate information, including student profiles, is provided for the teachers of the subjects. Judicious use is made of a dedicated noticeboard in the staffroom for sharing of general information while further information is shared discreetly with other members of the school team including the year heads and the special educational needs co-ordinator.

Students are given open access to higher level or ordinary level MTW and CS in certificate examinations in consultation with their parents and teachers. This is consistent with good practice. The decision regarding level is made at the appropriate time for the individual student. The uptake at higher level in the Junior Certificate and Leaving Certificate examinations in MTW and CS is very good

## **PLANNING AND PREPARATION**

Subject-department planning for the technologies in the school is very well supported by senior management. Formal meetings of the MTW and CS subject department are facilitated once per term. These meetings are well planned and their outcomes are recorded in line with good practice. A subject co-ordinator is actively engaged in facilitating the effectiveness of the subject department. The role of co-ordinator encompasses the organising and chairing of meetings, communication between the department and school management, dealing with everyday issues that arise and co-ordinating the review and updating of the department plan as needed. The role of co-ordinator is rotated annually among the subject teachers and this rotation is carried out fairly and transparently.

The teachers of MTW and CS work very effectively together for the development and implementation of the subject plan. A collaborative approach based on mutual professional respect and a shared sense of commitment to its aims is a clear characteristic of the subject department. The written subject plan includes programmes of work for MTW and CS which are consistent with the content and requirements of the respective syllabuses. As a next step in the further development of the plan, it is recommended that it be expanded to link identified teaching methods and approaches to specific content of the programmes of work. These links should involve making explicit reference to very good practice already being adopted in teaching MTW and CS. Regular review of the plan should provide opportunities for further diversification and development of teaching within the subject department. Specific uses of ICT, already integrated into the teaching and learning of MTW and CS to good effect, should also be detailed in the plan.

It is recommended that the good practices already in place for meeting the additional educational needs of students be detailed fully in the subject plan. These practices span areas such as diversification on the basis of students' project work, assessment and teaching methods and strategies.

Liaison between the MTW and CS subject department with other subject departments is ongoing and most productive. This liaison is particularly notable within the technology subjects where

planning is undertaken jointly with the teachers of DCG and Engineering, often informally. This collaboration across subject teams is good practice. It is recommended that particular attention be given to cross-curricular liaison and planning for first year programmes of work in the context of providing experience of all optional subjects for students. Careful planning should focus on minimising the impact of the inevitable reduction of time for each optional subject. The identification of common curricular elements and the rationalisation of their delivery will be beneficial in this.

The MTW and CS subject department reviews and analyses students' attainment in internal school assessments and in certificate examinations. The outcome of the analysis informs planning for the subjects. This tracking of improvements in students' attainment in response to the implementation of careful planning is good practice, particularly in the context of the developing nature of the school. It is recommended that this good practice be further strengthened.

The individual planning by teachers observed in the course of the inspection was of a very high standard. This planning resulted in coherent and well-structured lessons which were appropriate to the students' abilities and were in line with the subject plan. Teachers maintained reliable records of lessons, work completed to date, students' attendance, and homework in dedicated teachers' journals.

Teachers were thoroughly prepared for each of the lessons observed and in all cases the appropriate materials and tools used by students were on hand as required. An exceptionally broad and appropriate range of teaching resources was seen in use in the lessons observed and very good practice is adopted by the teachers with regard to planning for resources. The resources seen included video clips produced by individual teachers as well as commercially produced material. The data projector was used to present these and they were appropriately integrated into the lessons. The data projector was also used very effectively to present SolidWorks drawings of a project being realised by the students in an MTW lesson. Digital photographs of building work in progress were used to very good effect in one CS lesson. Teachers also used the overhead projector making very good use of prepared transparencies. In one lesson silhouettes of building components cut from rigid plastic sheet in a variety of colours were very well deployed. Students were assigned to correctly place these silhouettes on the chalkboard, first to build up a vertical section through an external block cavity wall and then to make the necessary changes to show a section through a timber-framed external wall. The standard of planning for resources was very high. The openness of the teaching team to sharing teaching resources is also commended. It is suggested that the very high quality resources seen could be even more efficiently shared by means of the computer network in the school.

## **TEACHING AND LEARNING**

Each of the lessons observed in the course of the subject inspection had clear aims which were communicated to students at the outset. Continuity was maintained with previous lessons by means of well-paced introductions, including where appropriate reference to homework completed in the intervening days. The lessons were coherent in structure and appropriately paced. Smooth transitions between stages helped maintain students' interest.

Practical-woodwork skills were proficiently demonstrated by teachers in the MTW lessons observed. The quality of these demonstrations was very good. The further reinforcement of best skills practice by means of appropriate video clips in a number of instances showed particularly

good practice. Further reinforcement of learning included peer demonstration which was well deployed in general. As a further development of the effectiveness of this approach, it is suggested that it be given more prominence within lessons. It is urged that students be more involved, constructively and positively, in analysing and commenting on the work of their fellow students and that care be taken to fully affirm the students' success.

A high standard of teaching was observed in each of the lessons. Whole-class teaching was the approach generally adopted and this was complemented by individual interaction between teachers and students as practical work was being completed following teacher inputs. It is suggested that the introduction of group work should be investigated. This would provide increased opportunities to differentiate the levels of difficulty of projects to be undertaken in the mixed-ability settings in which MTW and CS are taught. Differentiation of students' project-design work to suit their interests, skills and abilities has the potential to ensure that the educational needs of all students, including those with additional educational needs, are met to the fullest extent. Planning for such differentiation should be expanded within the subject plans.

In practical lessons in MTW, students generally worked from drawings of projects provided by their teachers. In one lesson however, students were set homework involving investigation of the dimensions of their MP3 players in preparation for some design input in the following lesson. This is good practice. Providing for individual creative input by students into the projects they undertake in MTW is fundamental to the requirements of the syllabus. Opportunities for individual student design should be included in each project undertaken at a level appropriate to the ability of the student.

Questioning was used skilfully by all teachers to explore students' knowledge in preparation for the lesson content being introduced. Further development of this very good practice should focus on framing differentiated questions to suit the individual abilities and knowledge of students. These questions should be directed to particular students to provide each with an appropriate level of challenge and affirmation. Questioning should also be such that it focuses students' attention on the salient points in the material being taught. It is recommended that full advantage be taken of such questioning throughout lessons as a means of reinforcing students' knowledge and understanding in addition to providing assurance of learning success.

Management of the classrooms used for teaching MTW and CS is of a very high standard. Students work at assigned places and all facilities used for teaching such as projectors, white boards and chalkboards are suitably placed and maintained to the highest standards. Floor space has been set aside and clearly marked for students' school bags to be deposited safely during lessons in the woodwork rooms. This good practice is indicative of the high level of attention to detail that was evident overall in the management of the classrooms. Teachers make appropriate use of the teaching spaces provided. In the case of the woodwork rooms, it is noted that there is an unhelpful echo due to the shape and size of these room depending on the position of the teacher within the room. It is good practice that the teachers are aware of this echo and take appropriate measures to minimise its adverse effect.

The quality of interpersonal relations in the lessons observed was consistently of a high standard. Students responded very well to the enthusiasm which the teachers displayed for the subjects. The students themselves showed a high level of interest in the work they did. Fine examples of students' work were displayed in the rooms together with a range of other subject-related materials combining to provide an attractive and stimulating learning environment.

There was clear evidence of good quality learning taking place. Students were fully engaged in each of the lessons observed. They participated keenly in all activities and responded well to their teachers' leadership. Students displayed appropriate knowledge and understanding of MTW and CS in the course of the lessons and when engaged in discussion by the inspector.

## **ASSESSMENT**

The MTW and CS subject department operates an agreed assessment policy which is consistent with whole-school policy. Students are formally assessed at Christmas, in summer and at both mid-terms. Common examinations are set in summer of second year and this is good practice. It is urged that the setting of common examinations be practised wherever practicable as it has well recognised advantages for learners and teachers alike. Each teacher arranges for continuous assessment within their own classes. It is recommended that end-of-term examination marks be aggregated with marks from continuous assessment to arrive at overall term results in MTW and CS. This arrangement is more consistent with the approach in certificate examinations which include elements of coursework assessment. The division of marks between continuous assessment and end of session examination should be standardised and formalised in the subject plan. The students should be made fully aware of the impact of their assessments on their results and be kept up-to-date on their progress. This would assist in providing students with consistent feedback on their progress and encouraging sustained effort.

The assignment of homework in the lessons observed was in line with good practice. The homework was directly related to the work of the lessons and provided students with opportunities to develop good independent study habits and to exercise creativity. In a number of instances the homework involved the completion of tasks begun in the classroom. Expectations with regard to the homework were clear and precise. Students noted the homework in their journals when these were to hand and it is suggested that students be reminded to have their journals on the bench when engaged in practical woodwork lessons. It is recommended that every opportunity be taken to provide meaningful written feedback to students as a support to their learning. The further development of good assessment for learning techniques in the annotation of homework and class work should be considered by the subject team. In each of the lessons observed the teachers provided an ongoing positive individual assessment of students' progress as they engaged in practical work. This is good practice.

Teachers of MTW and CS maintain good records of students' attendance and progress. These records are communicated to parents at annual parent-teacher meetings. Communication with parents is further maintained by means of written reports following term examinations. The students' journals provide an ongoing communication channel and the policy of these being signed at home on a weekly basis and countersigned by the class teacher provides a very good opportunity for parents and teachers to maintain contact with each other. The achievement of students in the certificate examinations in MTW and CS is consistent with national norms.

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

The following are the main strengths identified in the evaluation:

- Management and the subject teachers are commended for their part in the organisation, fitting out and commissioning of the teaching facilities including the installation of a centralised dust-extraction system.
- The deployment of the teachers of MTW and CS in rotation to teach each of the subjects is good practice; this along with the fact that they also teach Technical Graphics and Design and Communication Graphics supports sustainability, collaboration and collegiality within the subject department and across the technologies in general.
- The health and safety documentation of the subject department is very well structured and has been completed to a high standard.
- In line with good practice subject-option bands are generated in response to the expressed subject preferences of students.
- The active engagement of management and staff in developing the most suitable arrangements to facilitate students' experience of each optional subject before making choices in first year is particularly good practice.
- The uptake of MTW by female students, particularly in second year, shows a high level of success in the school's approach to achieving gender equality in the subject.
- An exceptionally broad and very appropriate range of teaching resources was used in the lessons observed; there was also evidence of very good practice with regard to planning for resources.
- A very high standard of teaching was observed in each of the lessons.
- There was clear evidence that good quality learning is taking place.

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

- The good practice already in place for meeting the additional educational needs of students should be detailed fully in the subject plan.
- Given the mixed-ability settings in which MTW and CS are taught, the introduction of group work to facilitate differentiation of student design projects should be investigated.
- The setting of common examinations should become the norm in MTW and CS.
- End-of-term examination marks should be aggregated with marks from continuous assessment to arrive at overall term results in MTW and CS.
- Assessment for learning techniques should be further considered and applied to the annotation of homework and class work.

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