Subject Inspection of Metalwork and Engineering
REPORT

Gorey Community School
Gorey, County Wexford
Roll number: 91492N

Date of inspection: 24 March 2010
REPORT
ON
THE QUALITY OF LEARNING AND TEACHING IN METALWORK AND ENGINEERING

SUBJECT INSPECTION REPORT

This report has been written following a subject inspection in Gorey Community School. It presents the findings of an evaluation of the quality of teaching and learning in Metalwork and Engineering 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 and examined students’ work. The inspector also reviewed school planning documentation. Following the evaluation visit, the inspector provided oral feedback on the outcomes of the evaluation to the principal. 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

Students enrolled in all curricular programmes offered in Gorey Community School have the opportunity to choose either Metalwork or Engineering where appropriate. This provision is commended and ensures that technology education is available to all students.

The allocation of class periods to Metalwork and Engineering is good, particularly in sixth year where students receive a total of six class periods per week. These periods are divided into both single and double lessons as is common practice, allowing time for both the theoretical and practical aspects of the syllabuses to be delivered effectively.

Currently there are five teachers deployed to teach Metalwork and Engineering. The good practice of deploying teachers across both junior and senior cycle is commended as it helps to maintain teachers’ familiarity with the various strands of the syllabuses and their exposure to practical, theoretical and project work at both higher and ordinary levels.

Uptake of the subjects among boys in the school is good. However the number of girls who choose the subjects is an area for improvement. The subject department should continue to promote the subject among all prospective students in the school with a view to increasing the proportion of girls who choose Metalwork and Engineering.

A number of supports are provided for students at important subject decision-making times. Prior to entering first year, students are given the opportunity to visit the specialist classrooms where they observe typical classroom activities such as project work and a variety of manufacturing processes. Upon completing the junior cycle programme, students and their parents are provided with information and guidance pertaining to the various curricular programmes available to them.
at senior cycle. These programmes include: Transition Year (TY), the established Leaving Certificate, the Leaving Certificate Vocational Programme (LCVP) and the Leaving Certificate Applied (LCA) programme. In addition to this, subject-specific information is also made available informally to parents and students by the subject teachers at parent-teacher meetings.

All three specialist rooms are equipped with a good range of information and communication technology (ICT) resources and a wide variety of machinery and equipment. The layout and organisation of these rooms varied considerably. Some items of machinery and equipment located in the rooms, and observed to be used by students, are not on the equipment list specified by the Department of Education and Skills for metalwork and engineering rooms. Senior management should identify these machines and reconsider their use in a classroom situation. In addition to this, a full risk assessment must be carried out without delay in all three specialist rooms utilised for the delivery of Metalwork and Engineering. Once this has been completed, senior management in collaboration with the subject department should put a strategic plan in place to address any identified hazards.

All members of the subject department have attended the recent continuing professional development (CPD) courses provided by the Technology Subjects Support Service (tS). This will facilitate the introduction of parametric modelling into the teaching and learning of the subjects and will be particularly useful in the development and completion of students’ design briefs at senior cycle. While it is recognised that members of the subject department have attended subject-specific and programme-specific CPD courses, senior management should consider prioritising refresher courses on the delivery of the various curricular programmes offered in the school. This is particularly necessary in relation to the JCSP, as in some instances, teachers were unaware of how many students in their class were following the programme. To remedy this situation, senior management should prioritise the identification of appropriate teaching and learning strategies for JCSP groups and the organisation and management of JCSP students within mainstream junior cycle class groups.

**PLANNING AND PREPARATION**

Senior management facilitates formal subject planning meetings once per term. It was reported that ongoing informal planning meetings take place on a more regular basis. A subject convener has been appointed and this role is rotated among all members of the subject department, as is best practice.

There is a good level of collaboration among all members of the subject department who endeavor to follow a common programme of study with all year groups. This collaborative approach is commended. The curricular plans that have been developed are primarily content-based and in many cases outline the sequence in which the chapters of the relevant textbooks will be completed. To further develop these plans, the subject department should begin to re-focus its planning on student learning as opposed to the delivery of content. In doing so, clear, identifiable and measurable learning outcomes would underpin all curricular planning.

The subject plan should also be developed to identify common approaches to the delivery of the subjects in the various curricular programmes offered in the school. For example, active teaching and learning methodologies should be identified and listed in the subject plan for inclusion in the TY and LCA programmes. Strategies aimed at developing students’ literacy and numeracy skills and profiling their achievements and development should also be introduced to junior cycle plans and lessons to ensure that all students, including those following the JCSP, are appropriately
catered for.

Preparation for all lessons was good and in some cases very good. This included the development of ICT presentations and the preparation of the required consumables, machinery and equipment prior to practical lessons. This level of planning is commended and helped to ensure that lessons were delivered effectively.

TEACHING AND LEARNING

The overall quality of teaching and learning in the Metalwork and Engineering lessons observed was good. A combination of theoretical and practical lessons was observed during the inspection. Very good practice was observed where both elements were integrated, allowing students to develop their practical skills and theoretical knowledge simultaneously. All lessons observed were consistent with the planned programme of work and this helped to ensure that lessons developed previous learning in a structured manner.

All lessons were well structured and provided good opportunities for student activity and appropriate teacher instruction. This was apparent in a senior cycle lesson where student activity was supplemented by a teacher demonstration. This blend of teacher and student activity helped to create an atmosphere conducive to learning, especially in a practical setting focusing on skill development.

Independent learning opportunities were created in a number of senior cycle lessons including an LCA lesson where students were challenged with the task of creating their own project utilising decorative metalworking techniques and thermal joining processes. This strategy was also utilised in a fifth-year lesson where students were given the freedom to plan, develop and manufacture their own design. This enabled students of all abilities to differentiate their work and to set their own standards based on their abilities and aptitude for the subject. This good practice is commended.

The quality of questioning was generally good. Teachers employed a number of good practices including individual questioning, probing, pausing and in some cases allowing students to confer before deciding upon their answer. These questioning strategies are most worthwhile and should be further developed throughout the subject department.

Where practical demonstrations were used, the benefits to students were clear. Two senior cycle lessons included demonstrations that helped students to develop their understanding of lathe work in both manual and computer-aided settings. These demonstrations helped to initiate student discussion and also provided students with a forum to engage in dialogue and to seek clarification in areas where they were unsure. This good practice is commended.

During a junior cycle lesson a number of assessment-for-learning (AFL) techniques were utilised to very good effect. In this lesson, a previous assessment was revisited in order to develop students’ understanding. This assessment was used to inform the teacher’s future methodologies and provided the teacher with an insight into specific areas that needed to be explained in greater detail. Such AFL strategies should be further utilised throughout the subject department.

ICT was incorporated into a number of lessons observed and considerable efforts have been made to develop appropriate electronic resources. In some cases these resources are stored on the school’s intranet. This is good practice and provides and students and staff with easy access to
good quality resources. As part of its ongoing development, the subject department should begin to itemise the electronic resources at its disposal and specify their location on the appropriate planning documents. In doing so, students in all class groups should benefit from a consistent approach to subject delivery.

Classroom management was very good in all lessons observed. Students in practical lessons behaved in an orderly fashion and adhered to the various rules and regulations required in a technology classroom. Students’ behaviour in almost all cases was very good and where low-level disruption was encountered, teachers dealt with it quickly and effectively. A positive atmosphere was also evident in all lessons observed. Students participated fully, were quick to contribute to discussions and offered answers or suggestions willingly.

Uptake at higher level and attainment in all certificate examinations over the last number of years in Metalwork and Engineering has been good. This trend is supported by the good level of student learning observed during the inspection. This was characterised by good responses to questions and by the capable execution of processes during practical lessons. Project work was also seen to be of a high standard, particularly at senior cycle where very good quality projects and design portfolios were made available to the inspector.

**ASSESSMENT**

Students are formally assessed in end-of-term written examinations. In addition to these assessments informal practical assignments are assessed on an ongoing basis throughout the year. The inclusion of additional end-of-topic assessments in some instances may help to inform teachers’ practices and facilitate the tailoring of lessons to suit individual students’ abilities.

The subject departments’ homework policy states that homework would be prescribed each week. Having examined students’ homework journals, it is recommended that the policies of prescribing homework regularly and ensuring that students record all prescribed homework be implemented fully.

The level of monitoring, assessment and feedback given by teachers on students’ class work varied considerably, as did the quality and presentation of students’ work. To improve this area for development, the subject department should formalise an assessment policy based on the delivery of useful formative and constructive feedback to students.

Students received good levels of oral feedback during practical lessons and this was evident throughout the evaluation. Project work is corrected and feedback is administered to students during and on completion of each project. This model of assessment is commended and should be further developed to include students’ written work as it would help each student to reflect on their learning and to improve their knowledge and understanding by implementing the advice and guidance given to them.

**SUMMARY OF MAIN FINDINGS AND RECOMMENDATIONS**

The following are the main strengths identified in the evaluation:
• Gorey Community School provides its students with the full range of technology subjects.
• The time allocated to Metalwork and Engineering is good.
• A collaborative planning culture is developing in the subject department.
• Good quality lesson planning and preparation was evident during the evaluation.
• The overall quality of teaching and learning in Metalwork and Engineering is good.
• Student uptake of higher level and attainment in certificate examinations is good.

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

• A full risk assessment of all rooms utilised for the teaching and learning of Metalwork and Engineering must be carried out without delay.
• Senior management should prioritise the identification and implementation of appropriate teaching and learning strategies for JCSP groups and the organisation and management of JCSP students within mainstream junior cycle class groups.
• The subject department should further develop its assessment policy and related practices, including the allocation of homework.

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.

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