

An Roinn Oideachais agus Scileanna

Department of Education and Skills

**Subject Inspection of Technical Graphics and
Design and Communication Graphics**

REPORT

**Scoil na mBráithre
Dungarvan, County Waterford
Roll number: 64880T**

Date of inspection: 12 May 2010



**A N R O I N N | D E P A R T M E N T O F
O I D E A C H A I S | E D U C A T I O N
A G U S S C I L E A N N A | A N D S K I L L S**

REPORT
ON
THE QUALITY OF LEARNING AND TEACHING IN TECHNICAL GRAPHICS AND
DESIGN AND COMMUNICATION GRAPHICS

SUBJECT INSPECTION REPORT

This report has been written following a subject inspection in Scoil na mBráithre Dungarvan. It presents the findings of an evaluation of the quality of teaching and learning in Technical Graphics (TG) and Design and Communication Graphics (DCG) 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 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. 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

TG and DCG are offered as optional subjects in the school's Junior Certificate and Leaving Certificate programmes respectively. Currently, DCG does not form part of the school's optional Transition Year (TY) programme. It is recommended that the subject department collaboratively develops an appropriate DCG module to complement the existing engineering module.

The resources and specialist equipment made available to the subject department are of a high standard and the recent reorganisation and management of the information and communication technology (ICT) resources has resulted in the development of an appropriate teaching and learning environment for graphics subjects. This ongoing commitment to the improvement of facilities is commended.

Teachers deployed to teach DCG have attended continuing professional development (CPD) courses provided by the Technology Subjects Support Service (t⁴). Attendance at these training events has resulted in tangible benefits to the delivery of the subjects. These include: access to and use of a variety of resources generated by the support service, the availability of technical advice in relation to ICT management and maintenance and the provision of a large number of subject-specific posters.

The four class periods per week allocated to TG and the five class periods per week allocated to DCG provides teachers and students with appropriate time to complete the syllabuses. Class periods are generally well dispersed throughout the week and are divided into both double and single periods as is common practice.

Currently three teachers are timetabled to teach graphics subjects in Scoil na mBráithre. Of these three teachers, two hold qualifications recognised by the Department of Education and Skills (DES) to teach the subjects to the highest level. While it is recognised that the current teaching team has made a significant contribution to graphics education in the school for many years, it is recommended that when forming a new graphics teaching team, senior management makes every effort to ensure that this team is comprised of suitably qualified teachers.

A system of rotation among the specialist subject teachers is currently in operation at senior cycle. This good practice has allowed both teachers to experience the new DCG syllabus simultaneously and at a time when there are intensive support structures in place to help with the implementation of the new syllabus. This good practice is commended.

First-year students are given the opportunity to sample TG for four weeks during the first term. After this initial period, students are then given the option of continuing to study one of the following subjects: TG, Technology or Art. This system helps the students to choose their preferred optional subjects based on their own experiences and aptitude for subjects. The proposed introduction of a DCG module during TY would be an additional support for senior-cycle students about to embark on their Leaving Certificate programme.

Historically the uptake of TG and DCG in the school has been good. In recent years the number of junior cycle students choosing TG has been a cause for concern. Senior management and the subject department should work collaboratively to identify the cause of this trend and implement strategies to remedy this situation.

PLANNING AND PREPARATION

The subject department engages in a number of meaningful subject planning exercises. These tasks have resulted in the formation of a subject plan for both TG and DCG. To further streamline and improve subject planning, these documents should be merged into one coherent graphics' subjects plan. In doing so, the subject department would reduce the inherent repetition in both documents and concentrate on developing the key areas of the plan, for example further developing the supports identified for students with additional educational needs and the collation of a database of electronic and geometric resources.

Curricular planning is detailed, content driven and time bound. All curricular plans identify key areas of the syllabuses to be completed and also include specific plans for revision. To further improve this planning, the subject department should identify and develop key learning outcomes for students associated with each content area of the syllabus. This would ensure that planning is focused on student's learning as opposed to the teachers' delivery of content.

The subject department has included a self-evaluation section in the subject plans. This is a most welcome endeavour as it provides the subject department with an opportunity to reflect on the previous year and to strategically plan for the future. The subject department should consider identifying specific, measurable and assessable goals in order to maximise the benefits of this good practice.

Planning for lessons observed ranged from very good to excellent. A wide variety of resources were prepared in advance of lessons and contributed significantly to the students' experiences. The subject department is commended for its commitment and diligence in relation to the planning and preparation of lessons.

TEACHING AND LEARNING

The overall quality of graphics teaching observed during the evaluation was good. All lessons had clear objectives and in most cases these outcomes were shared with students at the beginning, as is good practice. All lessons were consistent with the planned programme of work and were suitable to the students' abilities and their needs.

Most lessons followed a similar structure, as outlined in the subject planning documentation. This structure was characterised by an introduction, development and student-teacher activity based on the topic at hand. This structure was generally very successful.

Teachers used a variety of worthwhile methodologies to facilitate students' learning. These methodologies included: geometrical constructions carried out at the blackboard, individual assistance and guidance at students' desks, use of a variety of demonstrative software applications that helped to enhance students' visualisation and understanding of key concepts and the utilisation of large geometric models to help students to conceptualise abstract principles. This varied approach to teaching was most beneficial and is highly commended.

The use of ICT in both a teaching and learning context was excellent in many cases. In one instance, interactive simulation software was used extremely effectively to encourage students to recognise key relationships between the various elements of conic sections. This strategy worked exceptionally well. Parametric modelling software was used to promote students' visualisation skill development and a large number of topic specific resources have been developed and are stored on the school's intranet allowing students and teachers to access them readily. Initiatives of this kind are highly commended.

In most lessons, students were encouraged to actively participate throughout the lesson and an appropriate balance was evident between teacher and student activities in general. In a minority of instances teacher activities were somewhat prolonged and would have benefited from being punctuated with student activities. It is suggested that teachers be constantly aware of the time designated to instruction during lessons and take steps to ensure that an appropriate balance is maintained.

Student behaviour in all lessons observed was exemplary. A very positive atmosphere was evident from the interactions between teachers and students and this created a supportive and affirmative environment most conducive to teaching and learning.

Students demonstrated good levels of learning. This was apparent from the quality of their portfolio work, class work and from their interactions with their teachers and fellow students during lessons. A good proportion of students choose higher level at senior cycle and the majority of students choose higher level at junior cycle. At junior and senior cycle, students' results demonstrate significant levels of attainment at both levels. The subject department's commitment to promoting the uptake of higher level among all students is commended.

ASSESSMENT

Formal examinations are held twice per year for all year groups. Third-year and sixth-year students also sit additional 'mock' examinations at Easter. End-of-topic examinations are also held throughout the year to inform students and teachers of academic progress. The subject department has developed a common approach to the administering of homework. This policy outlines students' and teachers' responsibilities with regard to the completion, correction and monitoring of assigned work. The development of such a policy is commended but should be revisited to ensure that all aspects of the policy are adhered to. For example, an increased emphasis is needed on ensuring that time is designated to the discussion of homework assignments during each lesson and on the use of formative feedback on students' work.

The practice of students recording the completion of assignments in their portfolios is commended. This system promotes a sequential approach to the completion of class work and helps both students and teachers to identify areas that require additional attention. This practice should be adopted by all members of the subject department.

Students received very good levels of oral feedback during lessons. Written feedback on students' portfolio work was less obvious. To promote student self-evaluation and to encourage students to objectively assess their work, the subject department should consider implementing a peer and self-evaluation initiative. This could promote the further development of problem-solving and focused examination preparation particularly among senior cycle students. Teachers could scaffold this initiative by identifying exemplars and listing the specific success criteria, some of which should be based on the recommendations contained in the appropriate chief examiners reports.

SUMMARY OF MAIN FINDINGS AND RECOMMENDATIONS

The following are the main strengths identified in the evaluation:

- The overall quality of graphics teaching observed during the evaluation was good.
- A good level of resources is provided for the teaching and learning of graphics subjects in the school.
- Teachers have used the supports provided by the support services to enhance students' learning experiences.
- All lessons observed were well planned and structured appropriately.
- Teachers employed a wide range of methodologies in order to vary students' learning experiences.
- ICT was used innovatively and effectively as both a teaching and learning tool.

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

- Senior management should make every effort to deploy suitably qualified subject specialist to graphics subjects.
- A DCG TY module should be developed and introduced to the school's TY programme.
- A more consistent approach should be taken to providing students with a good level of formative feedback.

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.

Published November 2010