

An Roinn Oideachais agus Eolaíochta  
Department of Education and Science

## REPORT

Subject Inspection of Technical Graphics and  
Design and Communication Graphics

FCJ Secondary School,  
Bunclody, County Wexford  
Roll number: 63550Q

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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 FCJ Secondary School, Bunclody. It presents the findings of an evaluation of the quality of teaching and learning in Technical Graphics and Design and Communication Graphics and makes recommendations for the further development of the teaching of these subjects in the school. The evaluation was conducted over two days, 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 of the school was given an opportunity to comment in writing on the findings and recommendations of the report, and the response of the board will be found in the appendix of this report.

Subject provision and whole school support

FCJ Secondary School, Bunclody offers Technical Graphics (TG) and Design and

Communication Graphics (DCG) as part of its junior and senior cycle programmes. DCG has recently been added to the curriculum of the Transition Year (TY) programme. This is a welcome development. All graphics subjects receive appropriate time allocations and class contact time is timetabled evenly throughout the week.

There are two specialist graphics rooms in the school, one used for junior cycle TG and one for senior cycle DCG. Both rooms are well resourced, appropriately maintained and suitable for the teaching and learning of TG and DCG. Considerable work has gone into upgrading the senior graphics room in preparation for the introduction of the DCG syllabus. The subject department is commended for its commitment and dedication in providing the best possible learning environment for students of the subject. The allocation of these rooms among teachers has been devolved to the subject department and this arrangement is reported to be working well.

School management encourages and facilitates all members of the subject department to engage with continuous professional development (CPD). As a result of this, the subject department has forged links with the Technology Subjects Support Service (t4) and with the appropriate Teacher Professional Network (TPN). These links have been very beneficial to the subject department.

Currently, three teachers are deployed to the senior cycle class groups. It is current practice within the subject department to rotate teachers in the various levels and in all programmes offered in the school. This helps to ensure that all teachers gain the valuable experience of teaching the subjects at all levels and in all programmes. This practice is commended.

Prior to entry into first year, students choose their two optional subjects from two pre-defined optional subject bands. It was reported during the inspection that these optional subject bands change depending on students' choices. It is suggested that school management give students an open choice of optional subjects in first year, similar to what is in place at senior cycle. A variety of supports are put in place for students when making optional subject choices. These range from meetings with parents to an information evening where teachers of optional subjects can answer questions and provide information for students and parents pertaining to the specific subject area.

Uptake for TG and DCG is generally good among boys and girls. At senior cycle however, the number of girls choosing DCG is a cause for concern. The introduction of DCG to the TY programme may be the catalyst required to promote the new syllabus and to increase the number of girls choosing DCG at senior cycle.

#### Planning and preparation

School management facilitates regular planning meetings. The subject co-ordinator, a role that is part of a special duties post, convenes these meetings and records the minutes. The records of these meetings illustrate genuine discussion and dialogue in relation to a variety of issues of relevance to the subject department.

Curricular planning has been developed for each year group. This planning is based on

student learning outcomes and has specified timeframes for the completion of topics. Included in this planning is a section where teachers can reflect on the success or on areas for development in the delivery of the various aspects of the syllabuses. It is suggested that teachers maintain this reflective diary and that any recognised strengths or challenges are used to inform their future teaching and learning strategies.

The subject department has developed a number of departmental practices and policies in relation to dealing with specific issues such as homework, assessment, special educational needs (SEN) provision for students, and common teaching methodologies employed by the subject department. In addition to this, a system of peer mentoring has been introduced to the subject area where experienced teachers are paired with new teachers. It was reported during the subject inspection that peer observation and reflection have been introduced in order to create a common approach to the teaching and learning of the subjects. These initiatives are commended and are representative of a collaborative and a closely-knit team.

Currently, there are no long-term goals identified for the further development of the subject in the school. It is recommended that the subject department identify suitable goals and strategies to achieve them. The planning for such goals could be carried out through the development of strategic action plans that would identify the strategies required, the resources necessary, the personnel responsible, the criteria for success and appropriate timeframes. One possible goal for the subject department could be to increase the number of girls choosing DCG at senior cycle.

A DCG TY plan has been developed for the new module offered to TY students. This is a welcome development and could have positive repercussions for the subject at senior cycle. It is recommended that, in order for students to benefit fully from both the TY programme and from the DCG module offered as part of the TY programme, the subject department's TY plan be reviewed to ensure that it is taught, learned and assessed in a significantly different way from the approach to the subject in the Leaving Certificate programme. This could be achieved by employing group work, project work, student presentations and peer assessment as some of the teaching methodologies.

Teachers' individual planning for lessons was very good. A number of good quality teaching aids and resources were easily accessible and introduced to lessons where appropriate.

### Teaching and learning

Common practices were evident in all lessons observed. While all teachers demonstrated their own individual style and techniques, a common thread ran through all lessons observed. These practices included: the introduction of new material at the beginning of the lesson; considerable teacher circulation and individual help for students; the setting and correction of homework in class; and a recap of lesson content at the end of each class. The subject department's common approach to the organisation of lessons is commended.

All lessons were correctly sequenced and built upon previous student learning. Lessons were sequentially delivered in most cases. However, the focus on problem solving varied depending on the level of ability of each class group. It is suggested that, where possible,

students be encouraged to learn experientially and to develop their problem-solving abilities by applying their knowledge to questions.

Teachers' demonstrations of concepts and techniques were carried out using the blackboard, whiteboard, overhead projector and the data projector. The content being demonstrated was appropriate in all cases. However, the quality of these demonstrations varied. It is recommended that the subject department formulate a list of key quality indicators pertaining to the use of each demonstration medium in order to ascertain the standards required within the subject department.

Questioning was used throughout the lessons observed to assess students' understanding of key concepts. The level of questioning ranged from simple recall questions to higher-order questions that required students to apply their knowledge and understand why certain procedures were being carried out rather than simply remembering the correct sequence of events that would generate a correct solution. This type of questioning should be integrated into as many lessons as possible.

At all times, teachers used the correct technical terminology appropriate to the subject. In a small number of cases, students' use of terminology was incorrect and was left uncorrected by the teacher. It is recommended that all teachers insist on students using the correct terminology in both TG and DCG classes.

A variety of teaching methodologies are listed in the subject department plan as being appropriate to the teaching and learning of TG and DCG. Most of these methodologies were observed during the inspection. One methodology that was particularly successful was co-operative learning. In one lesson observed, students who were having difficulties were paired with other students who assisted them. This had benefits for all students as the work of the teacher was reinforced. Students were particularly comfortable with this arrangement and it added to the positive learning atmosphere apparent in lessons.

The subject department has accumulated a variety of good quality teaching aids and resources. These resources were incorporated into lessons where appropriate and not only added to the teaching and learning experience but were also helpful in conveying some complex principles to students. Information and Communication Technology (ICT) resources were also used in some lessons. One good example of use of ICT was observed in a senior cycle lesson where vertical cutting planes intersecting a sphere were modelled using parametric software. This had the effect of helping students to visualise the actual slicing of an object by a cutting plane thereby helping them to understand the concept.

Classroom management was effective in all lessons observed. Teachers insisted on full attention during demonstrations but allowed students to communicate when working on questions. This fostered a sense of collaborative learning where all students were responsible for their work. Classroom management was further supported through the teachers' constant circulation through the classroom and by the availability of essential drawing equipment for students who may have mislaid or forgotten it.

Both rooms used for TG and DCG are well equipped and provide suitable graphical learning

environments for students. The junior cycle TG room has a variety of subject-specific posters and student work on display. The new DCG assignment will provide the subject department with an opportunity to increase the quantity and quality of student work on display in the senior graphics room. These examples of quality student work will provide teachers with the opportunity to highlight good work and to set appropriate and attainable goals for all.

Teachers regularly and appropriately affirmed students' work and students responded to this by producing good quality drawings. Students were motivated and a good work ethic was evident in all lessons. Students demonstrated good understanding of key concepts through their drawings, answers and the level of questions posed to teachers.

The majority of students attempt higher level at junior and senior cycle in state examinations and generally achieve very well. These results are an accurate indication of the quality of teaching and learning in the subject area in FCJ Secondary School, Bunclody.

### Assessment

Where appropriate, a policy of common assessment is in place for year groups of similar ability. These assessments consist of terminal examinations combined with an element of coursework. This is a positive initiative as it reflects the examination methods used in the Leaving Certificate programme thereby helping students to become accustomed to the examination criteria and also gives students recognition for the work carried out throughout the year.

Homework was assessed in all lessons. In one instance, the outcomes of the assessment of prescribed homework helped the teacher to gain a fuller understanding of particular students' difficulties, thus allowing the teaching strategies employed to be modified in order to reinforce the key learning outcomes. This use of assessment to inform teaching strategies is commended.

Teachers offered appropriate feedback to students throughout the lessons observed. This was carried out mainly at students' desks where specific strengths and weaknesses were discussed. In addition to this formative feedback, some very good records of student assessments were also presented to the inspector. These assessments are extremely useful in plotting particular students' progress and in identifying areas that need to be revised.

### Summary of main findings and recommendations

The following are the main strengths identified in the evaluation:

The subject department has access to two well-equipped and well-maintained specialist graphics rooms.

The subject department has forged good links with the Technology Subjects Support Service and with the relevant TPN.

The subject department has developed a collaborative approach to subject planning. A variety of suitable methodologies are planned and employed in the teaching of the subjects.

Students are motivated and eager to learn. This, combined with the quality of teaching, results in good attainment in state examinations.

A variety of teaching resources and models has been accumulated by the subject department and these are used effectively to explain complex principles to students.

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

The subject department should continue to develop the subject plan by identifying long-term goals for the further development of the subjects such as increasing the number of girls choosing DCG at senior cycle.

The subject department should further develop the current Transition Year plan to accurately reflect the teaching and learning strategies employed in the programme and to identify additional learning experiences appropriate to the Transition Year programme. It is recommended that the subject department review the demonstration media used to convey key concepts to students and determines the optimum standards required for each method.

Post-evaluation meetings were held with the teachers of Technical Graphics and Design and Communication Graphics and 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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Appendix

School Response to the Report

Submitted by the Board of Management

Area 1 Observations on the content of the inspection report

The Board of Management of F.C.J. Secondary School, Bunclody, Co. Wexford, acknowledges the professionalism and dedication of the teachers in the Technical Graphics & Design and Communication Graphics Departments for their work and commitment to the school and congratulates them on an excellent Inspection.

Area 2 Follow-up actions planned or undertaken since the completion of the inspection activity to implement the findings and recommendations of the inspection

The Board notes the recommendations for development and will endeavour to address them within the level of resources available.

