

An Roinn Oideachais agus Scileanna

Department of Education and Skills

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

REPORT

**Borris Vocational School
Borris County Carlow
Roll number: 70400L**

Date of inspection: 28 January 2011



**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 Borris Vocational School. 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 two days, 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 the teachers' written preparation. Following the evaluation visit, the inspector provided oral feedback on the outcomes of the evaluation to the principal and subject teachers. The board of management was given an opportunity to comment in writing on the findings and recommendations of the evaluation; a response was not received from the board.

SUBJECT PROVISION AND WHOLE SCHOOL SUPPORT

A graphics subject is offered to students in all of the school's curricular programmes. Within these programmes, the allocation of class periods is appropriate. This allocation includes four periods per week at junior cycle, two periods per week in each of the three ten-week modules offered during the school's optional Transition Year (TY) programme and five class periods per week in fifth and sixth year. These periods consist of both single and double periods as is common practice.

The subject department is comprised of four suitably qualified graphics teachers who specialise in both Engineering and Construction Studies. This range of expertise provides the subject department with a good knowledge base, particularly in relation to the various optional components of the DCG syllabus.

Access to graphics subjects in the school is very good. Students in first year are given the opportunity to sample six of seven optional subjects. This sampling programme concludes before the October mid-term break when students make their final subject choices. It was reported that satisfaction rates are high among students and that this model is effective. The recently introduced DCG TY module introduces students to elements of the DCG syllabus while also enabling students who decide not to progress to Leaving Certificate DCG to gain an appreciation for graphics. The interventions employed to help students make fully informed subject choices are commended.

Overall student uptake of graphics subjects is good. There is an appropriate gender balance at junior cycle and in TY. However, in fifth and sixth year there are currently no girls studying DCG. The subject department should endeavour to address this imbalance with a view to further developing awareness of DCG as a viable Leaving Certificate subject for girls.

The graphics specialist room is a model of best practice. Considerable alterations and improvements have been made to the layout and furniture specifications. These improvements add to its overall aesthetics and functionality.

The subject department has engaged fully with the Technology Subjects Support Service (t⁴) and has attended the recent continuing professional development (CPD) courses provided to facilitate the implementation of the new DCG syllabus. Members of the subject department have also attended CPD courses covering advanced parametric modelling. This level of engagement in CPD is commended.

PLANNING AND PREPARATION

Senior management facilitates subject planning meetings biannually. The appointed convenor ensures that planning tasks assigned during subject planning meetings are completed in a timely manner. The proceedings of these meetings are recorded as is good practice. The subject department works in a collaborative manner and all members expressed the view that this arrangement facilitates the sharing of resources and expertise. This should be extended to include specific discussions relating to pedagogical issues at each subject planning meeting. The ongoing development of this form of professional discourse will help to improve the impact of subject planning on the teaching and learning of graphics subjects.

A subject plan has been developed by the subject department. This plan documents the subject department's policies in relation to students with additional educational needs, cross-curricular integration and effective teaching methodologies. To further develop this plan, the subject department should identify specific interventions aimed at supporting individual students and strategies aimed at identifying ways to improve students' literacy and numeracy in a graphical educational context. This could be achieved through the identification of subject specific keywords and the further development of numerical skills in relation to units, estimation, area and volume.

Common plans have been developed based on curricular content. The next stage of development should include the identification of learning outcomes for each area. The achievement of these learning outcomes should be linked in the plans with assessments, suitable teaching methods, reasonable timeframes and appropriate resources.

A draft TY DCG plan has been developed and is being trialled with the current TY cohort. This plan includes a variety of positive strategies aimed at introducing aspects of graphics education to fourth-year students. The ongoing development of this plan should now focus on identifying a wider range of interesting and significantly different teaching and learning strategies. Possible areas for inclusion could include pair and group work and student presentations based upon their experiences during the module.

Individual planning and preparation was at a consistently high level. Teachers prepared resources and teaching aids to facilitate students' learning in advance of all lessons observed. These included a wide range of electronic resources and physical models. The level of planning and preparation for lessons is commended.

TEACHING AND LEARNING

The quality of teaching observed was good. Each lesson had a clearly identifiable learning intention. This was most beneficial to students when it was outlined to them from the outset or prior to the commencement of a task as students were made fully aware of the specific success

criteria. Lessons were generally well structured and comprised of concise introductions followed by clear teacher demonstrations that focused on planned student activities, allowing teachers to circulate among students providing support and guidance throughout the lessons. Recapitulation of the key learning outcomes did not occur in any lessons observed. It is recommended that the salient points of each lesson be revisited and reinforced during and at the end of lessons where appropriate.

A wide range of demonstration techniques was utilised during the lessons. These methods were suitable in all instances and were appropriate to the tasks at hand. Information and communication technology (ICT) resources were incorporated into lessons and used effectively to demonstrate specific concepts. The use of effective ICT resources complemented teachers' presentation skills and enhanced students' learning experiences.

The questioning strategies utilised during the lessons observed enabled teachers to differentiate according to students' abilities. This approach was quite effective and promoted a good level of discussion and participation by students of all abilities. All students were encouraged to participate in whole-class discussions and problem-solving activities. This inclusive approach created a participatory learning environment. Examples of good quality student work were displayed in the graphics classroom. These examples should be regularly rotated with new examples of high quality student work. This would also provide teachers with an opportunity to affirm students who have made a significant effort or who have made a noticeable improvement.

Students displayed a high level of ICT skills and were capable of utilising parametric modelling software to an appropriate level when generating and manipulating their own electronic models. Students articulated their understanding of topics coherently and their drawings were generally completed to a good standard. Overall students' portfolios were well maintained and with the addition of some supplementary supporting notes will form a most useful study aid.

Student uptake and attainment is appropriate and at junior cycle uptake of higher level is particularly good providing a very good foundation for students wishing to progress to senior cycle DCG. The introduction of the new DCG module in TY will be of considerable benefit to students as it will help them make more informed subject choices and also develop some of the skills required in fifth and sixth year.

ASSESSMENT

A whole-school homework policy is currently being developed in Borris Vocational School. To maximise the benefits for students the graphics subject department should consider the implications that such a policy will have for the teaching and learning of graphics subjects. Areas for consideration should include: a common policy on appropriate quantities of homework, the desired outcomes of homework activities i.e. recapitulation, preparation, innovation or design and an agreed approach to the provision of formative and summative feedback. A common approach to these essential elements of assessment will serve to strengthen the individual practices currently in place.

Currently no common approach has been agreed in relation to assessing students' portfolio work. It is suggested that the subject department consider all options including allocating a percentage of end-of-term examinations to satisfactorily completed coursework. The adoption of a common approach will encourage and incentivise students to maintain their coursework to a very high standard. This practice would be a most beneficial learning experience as it would prepare students for some elements of the new DCG assessment procedures particularly in relation to portfolio submissions.

Good levels of formative feedback were administered during lessons. In addition to this, some students' work showed evidence of correction and summative feedback. To increase the benefits accrued from formative feedback, subject teachers should correct samples of student work periodically and use these samples to provide the entire class group with insights into how to improve their standard of drawing or modeling. In doing so, teachers will be better positioned to further modify their teaching strategies in order to cater for the varying needs of their class groups.

SUMMARY OF MAIN FINDINGS AND RECOMMENDATIONS

The following are the main strengths identified in the evaluation:

- Graphics subjects receive a good level of support in relation to curriculum provision, resources and the facilitation of teachers' CPD.
- The subject department actively plans for the delivery of graphics education in the school.
- Individual planning and preparation for lessons observed during the evaluation was of a high standard.
- A good standard of graphics teaching was observed during the evaluation.
- Students demonstrated a good degree of subject-specific knowledge and had an appropriate skill level especially in relation to parametric modelling.

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

- The subject department should further develop the subject plan by focusing on supports for students with additional educational needs and literacy and numeracy interventions appropriate to graphics lessons.
- Curricular plans should be extended to include learning outcomes for students and the associated timeframes, resources, assessments and methodologies required to achieve them.
- The subject department should formalise its policy in relation to portfolio assessment and to feedback with a view to maximising the impact of formative assessment on students' outcomes.

A post-evaluation meeting was held with the principal and subject teachers at the conclusion of the evaluation when the draft findings and recommendations of the evaluation were presented and discussed.

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