

**An Roinn Oideachais agus Scileanna**

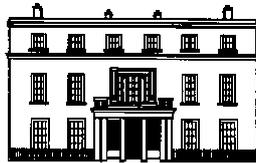
**Department of Education and Skills**

**Subject Inspection of Mathematics  
REPORT**

**Dominican College Wicklow  
Co. Wicklow**

**Roll number: 61860V**

**Date of inspection: 7 May 2014**



**AN ROINN | DEPARTMENT OF  
OIDEACHAIS | EDUCATION  
AGUS SCILEANNA | AND SKILLS**

**REPORT  
ON  
THE QUALITY OF LEARNING AND TEACHING IN MATHEMATICS**

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**INFORMATION ON THE INSPECTION**

<b>Dates of inspection</b>	6 and 7 May 2014
<b>Inspection activities undertaken</b> <ul style="list-style-type: none"><li>• Review of relevant documents</li><li>• Discussion with principal and teachers</li><li>• Interaction with students</li></ul>	<ul style="list-style-type: none"><li>• Observation of teaching and learning during seven class periods</li><li>• Examination of students' work</li><li>• Feedback to principal and teachers</li></ul>

**MAIN FINDINGS**

- The quality of teaching and learning ranged from good in the majority of lessons to very good in others with some scope for development noted.
- Overall support for Mathematics is good, with some areas for review also identified particularly in relation to timetabling of the subject.
- Classroom management and student behaviour were uniformly very good.
- In some lessons, effective teaching strategies that promoted students taking ownership of their learning were observed.
- The qualifications' profile of the mathematics teachers is very good, however, this year some teachers have limited contact with the subject.
- Subject department structures are well established and this has resulted in the development of common schemes of work and assessment practices, with some areas requiring further attention.

**MAIN RECOMMENDATIONS**

- Methodologies and questioning strategies that support and promote greater involvement of students in their learning should be integrated into all lessons.
- Schemes of work should be aligned more closely with the Project Maths syllabuses and should include details of learning outcomes, resources, methodologies and modes of assessment.
- A systematic analysis of students' attainment should support the development of action plans with a view to increasing participation in higher level particularly at junior cycle.

## **INTRODUCTION**

Dominican College Wicklow is an all-girls' secondary school in Wicklow town and has a current enrolment of 435 students. The school offers the Junior Certificate, the established Leaving Certificate, the Leaving Certificate Vocational Programme and a compulsory Transition Year (TY) programme.

## **TEACHING AND LEARNING**

- The quality of teaching and learning ranged from good in the majority of lessons to very good in others with some scope for development noted in a few instances.
- Classroom management and student behaviour was uniformly very good. In a few cases, teachers explicitly stated the learning outcomes for the lessons and reviewed progress during or at the end of the lesson. This is in line with best practice and should become a feature of all lessons.
- Effective group work enabled a discovery approach to be used in a few lessons namely during the teaching of the coordinate plane, geometry and measure. In these lessons, students built on prior learning to develop the lesson concept further and the chosen activities challenged students to draw on many areas of the curriculum. This is very good practice and ensures that students are aware that Mathematics is a series of interconnected concepts rather than topics learnt in isolation. Such approaches, as promoted by Project Maths, encourage students to take ownership of their learning and should be used more often in lessons.
- In a few cases, however, classroom teaching was mostly teacher led. In general this approach was not sufficiently engaging for all students and resulted in some becoming over reliant on their teacher or disengaged. It is recommended that where appropriate, active methodologies as promoted by Project Maths and as observed in some lessons should be used.
- Questioning strategies were very good in the main but required development in some lessons. Effective higher-order questions that challenged students to think about the topic before providing justification for their answers were observed in some lessons. Statements such as “how did you come to that conclusion” were used, thus promoting learning for understanding.
- In lessons where there was an over dependence on global and or lower-order questions some students became passive and although attentive did not participate fully in their learning. Teachers should, where appropriate, ensure that there are greater opportunities for students to engage in dialogue in the subject.
- In many lessons, students' learning ranged from good to very good, but in a few lessons there were times when individual participation could have been better. To maximise student engagement with their learning all teachers should work towards greater collaborative learning experiences for their students.
- Supplementary resources were carefully selected to support learning. The use of a coordinate geometry game, developed by a teacher, was very effective. The differentiated aspect of the game enabled all students to achieve at a level commensurate with their ability. This is very good practice.
- The layout of some teacher-based classrooms and subject displays supported collaborative learning while student displays of work and subject specific resources

enhanced the learning environment. Further development of such practices is encouraged in all classrooms.

- Appropriate methods to assess students' attainment and progress operate within the school. However, the practice of formative written feedback for students varies. This is an area for further development among members of the mathematics department.
- An analysis of students' attainment in state examinations indicates that a sizable number choose ordinary level at junior cycle and are achieving very favourably at this level. It is recommended that a more systematic long-term analysis of students' attainment at all levels be undertaken. This analysis should then support the development of a long-term plan for Mathematics, with measurable targets to increase student participation particularly at higher level in junior cycle.

#### **SUBJECT PROVISION AND WHOLE SCHOOL SUPPORT**

- There is very good support for Mathematics from management, including additional teacher resources for the subject, concurrent timetabling and facilitation of attendance at continuing professional development courses.
- Time allocated to Mathematics is generally good, however there are a few timetabling anomalies that have occurred this year. One third-year class is currently shared between two teachers, a practice that is not ideal for students and which should be avoided in the future. Second-year mathematics students do not have daily contact with the subject. It is recommended management work towards rectifying these anomalies.
- The mathematics department comprises seven teachers all of whom are graduates in the subject. Some teachers have limited contact with the subject in the current year. The possibility of forming a core group of mathematics teachers, each of whom is allocated substantial contact time with the subject, should be considered.
- Rotation practices at junior cycle are well established. At senior cycle, only one teacher teaches higher level which limits capacity. Management is currently putting structures in place to support and increase capacity in this area. This approach is welcomed.
- Appropriate structures are in place to support students in need of mathematics support. The mathematics department is fortunate to have the expertise of a resource teacher who is a member of the department.
- Student participation in co-curricular and extra-curricular activities for Mathematics is promoted. These activities include an annual visit to National University of Ireland, Maynooth during which students participate in mathematics problem solving workshops and SciFest.

#### **PLANNING AND PREPARATION**

- Subject department structures are well established. The position of coordinator is generally rotated among teachers and regular formal and informal planning meetings are held throughout the school year.
- Minutes of meetings indicate that organisational details of the department form the basis of most meeting discussions. In future, time should be given to the discussion and adoption of consistent approaches to the teaching of core mathematical procedures.

- The subject department plan provides an overview of the organisational details of the department and schemes of work. Schemes should be aligned more closely with the Project Maths syllabuses. These should include details of learning outcomes, resources, methodologies and modes of assessment.
- TY mathematics is currently offered on a modular basis until Christmas after which a discrete higher-level group is formed. Ongoing monitoring of this practice is recommended particularly in light of the recommended review of student attainment at junior cycle.

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The draft findings and recommendations arising out of this evaluation were discussed with the principal and subject teachers the conclusion of the evaluation. The board of management 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.

# **Appendix**

**SCHOOL RESPONSE TO THE REPORT**

**Submitted by the Board of Management**

### **Area 1: Observations on the content of the inspection report**

The Maths teaching team were in general agreement with the content of the Report. It was noted that the timing of the inspection impacted on teaching methodologies used in May, preparing for exams. The Maths team stated that the subject inspection was a productive and rewarding experience.

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

As requested: (1) Changes in the timetabling of Maths to be in place in Sept. 2015. (2) More teachers have expressed interest in teaching H.L. Maths in Senior Cycle. (3) More students are being facilitated and encouraged to take Maths at higher level. (4) The practice of sharing teaching resources has extended to online collaboration. (5) Further integration of I.C.T. into each classroom.