

An Roinn Oideachais agus Scileanna
Department of Education and Skills

Subject Inspection of Mathematics
REPORT

Loreto College
Cavan, County Cavan
Roll number: 61070P

Date of inspection: 10 May 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 MATHEMATICS**

INFORMATION ON THE INSPECTION

Dates of inspection	9 and 10 May 2011
Inspection activities undertaken <ul style="list-style-type: none">• Review of relevant documents• Discussion with principal and teachers• Interaction with students	<ul style="list-style-type: none">• Observation of teaching and learning during seven class periods• Examination of students' work• Feedback to principal and teachers

MAIN FINDINGS

- High quality teaching and learning were evident in the lessons observed.
- The practice in relation to assessment is very good.
- The relationships between students and teachers was characterised by warmth and care.
- Whole-school provision for Mathematics is very good; time allocation for the subject is good and there is very good provision of resources and access to information and communications technology (ICT).
- The mathematics department has engaged well with the planning process and a good subject plan has been developed.
- The analysis of the school's attainment in the certificate examinations compared to national norms indicates that the school is performing well.

MAIN RECOMMENDATIONS

- The mathematics department should build on the conceptual approach taken in most lessons by extending it to all lessons.
 - Learning should be differentiated to suit the range of abilities present in each class group; strategies to ensure that all students are sufficiently challenged should be included where appropriate.
 - Opportunities for students to learn the skills necessary to interpret questions presented in unfamiliar contexts and to think through mathematical ideas for themselves should be optimised in lessons.
 - Students should be assigned to level groups on a mixed-ability basis where there is more than one group of a particular level.
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INTRODUCTION

Loreto College, Cavan is a voluntary Catholic secondary school for girls with 718 students. Transition year is provided and is optional.

TEACHING AND LEARNING

- High quality teaching and learning were evident in the lessons observed. Instruction was clear and where appropriate real life situations were used in explanations. The range of methodologies used included pair work, teacher exposition, activities, demonstrations, and ICT. Students participated and engaged very well. Teachers were committed to ensuring positive outcomes for their students. The analysis of the school's attainment in the certificate examinations compared to national norms indicates that the school is performing well.
- ICT resources have recently been increased and some good ICT use was observed. It is also good that teachers are working on developing the use of ICT in teaching and learning.
- It is good that most teachers took a conceptual approach in classroom practice and were careful to explain the reasons behind steps in solutions; this reflects the spirit of *Project Maths*. In some cases there was scope for teachers to enhance learning by focusing in the lesson activities on students achieving a deeper understanding of the underlying concepts being explored.
- Individual attention provided to students experiencing difficulty was a feature of all lessons. In some cases students who had class work completed were allowed to work ahead which is also good practice. However, not all teachers took this approach. Learning should be differentiated to suit the range of abilities present; strategies to ensure that all students are sufficiently challenged should be included where appropriate.
- In some cases teachers encouraged students to attempt questions without help. This valuable approach provided students with opportunities to think through mathematical ideas for themselves and to practise the skills necessary to interpret questions presented in unfamiliar contexts. This approach was not used in all lessons however. It is therefore recommended that this good practice be extended to all lessons.
- The practice in relation to assessment is very good. There was much evidence of Assessment for Learning (AFL); teachers provided valuable feedback and advice to students on how they could improve. In addition, the learning objectives were shared with students at the beginning of lessons and checked at the end.
- Student behaviour was of a very high standard. The relationships between students and their teachers was characterised by warmth and care. Teachers were affirming, encouraging and supportive of students' efforts.

SUBJECT PROVISION AND WHOLE SCHOOL SUPPORT

- Timetable provision for Mathematics and timetable arrangements for level choice are good. There is very good whole-school support for the subject in terms of provision of ICT and other resources for teaching and learning. The mathematics teachers have been creative in developing their own resources, using everyday objects and facilitating students in creating resources to enhance learning in Mathematics.

- Students are assigned to mixed-ability class groups in first year for Mathematics and are reorganised into ability levels from second year onwards which is a good arrangement. However, from second year onwards there is a top higher-level class, a second higher-level class, and so on. This arrangement provides students with an explicit statement of expectation that can go on to define them. Therefore it is recommended that it be reviewed; consideration should be given to assigning students to level groups on a mixed-ability basis where there is more than one group of a particular level. Research carried out in this area should be consulted.
- There is good rotation of junior cycle higher-level Mathematics among the seven teachers. However, in the senior cycle higher-level class groups are rotated among three teachers. There is very good uptake of higher-level senior cycle Mathematics. In order to ensure that the school has sufficient capacity to deliver Mathematics at this level, the number of teachers taking higher-level senior cycle classes should be increased.
- There has been extensive involvement in CPD courses by members of the mathematics department and this is strongly supported by school management.
- Support for students with special educational needs and for students for whom English is an additional language is good.
- Many opportunities are provided for students to participate in extracurricular mathematical activities; this is very beneficial.

PLANNING AND PREPARATION

- Formal planning time for Mathematics is provided once per term as part of the whole-school planning process. However, the teaching team or sections of the team hold meetings frequently. There is very good collaboration and sharing of expertise amongst members of the subject department and this work is co-ordinated by a senior mathematics teacher.
- The subject plan contains all of the relevant policy documents and programmes of work for each year group and level. The mathematics teachers have invested significant effort in implementing the first two strands of the new syllabuses. This work has centred on incorporating the material for *Project Maths* strands one and two in the programmes of work and creating resources for teaching and learning to support the implementation of *Project Maths*. To further this good work it is recommended that the development of the programmes of work should now focus on planning for students to gain a solid understanding of the core concepts outlined in the learning outcomes on the syllabuses. Furthermore, the programmes of work should include opportunities for students to practise skills, such as tackling context-based questions and problem solving that are essential skills for success in *Project Maths*.
- The mathematics department engages in valuable self-evaluation. This is evident in the analysis of the school's achievement in the certificate examinations compared to national norms carried out each year and also in the review of initiatives such as Assessment for Learning (AfL).
- The TY programme for Mathematics comprises a good combination of syllabus and non-syllabus material. Opportunities in TY are provided for students to enjoy the subject and appreciate its relevance. A module of Applied Mathematics is taught to some groups in TY. It is suggested that it be provided to all groups.

The draft findings and recommendations arising out of this evaluation were discussed with the principal, deputy principal and subject teachers at 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.

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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

Teachers in the Mathematics Department have and continue to work collaboratively to develop their skills and strategies in teaching Project Maths.

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

1. The Mathematics Department have: the conceptual approach, differentiation and interpretation techniques top of their agenda for Mathematics Subject Department meetings.
2. Students in 2nd and 5th year have been assigned to mixed ability groupings at ordinary level and higher level.