

An Roinn Oideachais agus Scileanna

Department of Education and Skills

**Subject Inspection of Mathematics
REPORT**

**Sancta Maria College
Ballyroan, Dublin 16.**

Roll number: 60341P

Date of inspection: 12 February 2014



**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	11 and 12 February 2014
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 six class periods• Examination of students' work• Feedback to principal and teachers

MAIN FINDINGS

- The quality of teaching and learning ranged from fair to good, with some elements of very good practice observed in a few lessons.
- Management facilitates participation in subject-specific and whole-school continuing professional development (CPD) courses; however, there was little evidence of the implementation of strategies encountered in such training in many of the lessons visited.
- Time allocated to Mathematics is very good and lesson distribution is generally good.
- A significant number of the mathematics department are not graduates in the subject.
- Members of the mathematics department are commended for providing students with opportunities to engage with the subject through co-curricular and extra-curricular activities.

MAIN RECOMMENDATIONS

- Teaching methodologies and questioning strategies that support and promote learning for understanding should be used in all lessons.
- Members of the mathematics department who are not graduates should access the upskilling programmes available.
- The mathematics department should have a clear focus on subject development planning to promote good and consistent practice.
- The mathematics department should develop a plan to address the uptake and achievement of students, with associated action plans to achieve improvements.

INTRODUCTION

Sancta Maria College is a voluntary secondary girls' school in Dublin with an enrolment of 499 students. The school offers the Junior Certificate, the Leaving Certificate Vocational Programme, the established Leaving Certificate and an optional Transition Year (TY). The evaluation was conducted as Junior Certificate and Leaving Certificate year groups were sitting trial examinations. Copybooks for these year groups were reviewed.

TEACHING AND LEARNING

- The overall quality of teaching ranged from fair to good with some aspects of very good practice noted in a few lessons. Best practice was observed where students were challenged about their mathematical understanding, thereby deepening their knowledge of the topic.
- The majority of teachers explicitly stated or recorded on a white board the key learning objectives for the lesson. However, the review of these objectives only featured in a few lessons. It is recommended that learning objectives be reviewed as it will allow the teacher to assess what learning has taken place, while guiding future planning for the subject.
- Methodologies observed included traditional whole-class teaching and group activities. While these methods were good in some lessons, overall there is scope for improvement in many of the approaches used. For example, all group activities should be purposeful, with students having a very clear understanding of their individual and collective roles. In this way students are fully aware of their involvement in their learning and sufficient opportunities are afforded to students to develop skills and mathematical concepts.
- In a few lessons, very good use was made of targeted higher-order questions that challenged students to provide justification for their answer while deepening their understanding of the topics. In such lessons teachers frequently used “why” or “explain to me how”. It is recommended that all teachers use more targeted higher-order questioning to deepen students' mathematical concepts while promoting learning for understanding.
- Students' learning varied from fair to good. In some lessons, students' use of subject terminology and understanding of some mathematical concepts was unsatisfactory. During interactions, some students lacked confidence about the mathematical approach they had chosen. Students should be given more opportunities to discuss and work collaboratively to deepen their understanding and learning of Mathematics.
- In many lessons, students were required to complete worksheets based on the lesson content. However, worksheets should be sufficiently differentiated to ensure that all students are challenged and learning is progressive.
- In some instances, students' project work and subject-specific materials were displayed. In other lessons the display of additional mathematical materials, such as a number line, would have aided student learning.
- The reconfigured classroom layout in two classrooms visited effectively supported student learning. This practice should be extended further where appropriate.
- Information and communication technology (ICT) was used as a visual aid or to assist in the correction of homework. Effective use was made in one lesson of 'show me' boards, where students were required to write their answer to the teacher's question. In this lesson, the teacher used some aspects of assessment for learning (AfL) to address

misconceptions in students' learning and to adjust the lesson appropriately. This is very good practice and should feature more often in all lessons.

- A review of students' copybooks indicated a range of practices in the monitoring of student's work. Greater use of written formative feedback and other forms of feedback is recommended, with common practices and procedures agreed at department meetings.

SUBJECT PROVISION AND WHOLE SCHOOL SUPPORT

- Time allocated to the subject is very good and concurrent timetabling is facilitated from second year onwards. Additional teachers are deployed at senior cycle to facilitate independent level class formation. This year Mathematics is not timetabled on a daily basis in first or second year. Management should endeavour to timetable Mathematics on a daily basis, as recommended to support the national numeracy strategy.
- Eight teachers are deployed to teach Mathematics in the school. A significant number of them are not graduates in the subject. Teachers share in the rotation of levels at junior cycle, but generally one teacher teaches higher level at senior cycle. Members of the mathematics department who are not Mathematics graduates should participate in upskilling programmes such as courses provided by the Department of Education and Skills in order to be able to teach the subject up to the highest level.
- Management facilitates attendance at CPD events including Project Maths and whole-school CPD. Topics such as AfL, differentiation, and school self-evaluation have been covered. Given the range of CPD provided, it was disappointing that strategies encountered in such in-service were not used in many lessons observed. All teachers should use strategies encountered during such in-service in their daily teaching.
- Students have opportunities to participate in co-curricular and extra-curricular competitions. In addition, members of the mathematics department facilitate a maths club at lunchtime. Teachers are commended for their work in this club.

PLANNING AND PREPARATION

- Management facilitates formal subject department meetings throughout the school year and minutes of meetings are retained. Minutes mostly detail organisational issues, with some more recent records of issues such as the school's self-evaluation theme of literacy being discussed. For example, minutes of meetings indicate that key words could be taught at the start of the lesson. However, in practice this strategy was rarely observed and is an area for further development by all teachers. Mathematics teachers should also discuss and agree strategies for the teaching of common topics which would allow for a consistent approach to be used by all.
- To ensure that the mathematics department works developmentally it is recommended that a coordinator or convenor of the subject be agreed and rotated regularly. In this way all teachers will have an opportunity to lead and share in the overall responsibility for the coordination and development of the subject.
- Subject planning documents include organisational details for the subject and schemes of work. It was noted however, that there is little evidence of sequencing of schemes of work between higher and ordinary levels. This is an area for development to ensure that gaps do not occur for students should they move levels. It is further recommended that schemes of work be referenced in terms of the various strands of the syllabus.

- Management undertakes a review of students' attainment in the state examinations. The mathematics department should undertake a detailed analysis of students' performance and develop an action plan to address areas of concern that arise from such a review.
- The TY plan does not comply with Circular Letter M1/00 and requires updating.

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 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.

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 Sancta Maria College accepts the Inspection Report.

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 of Management of Sancta Maria College are writing to all teachers of Mathematics, and strongly recommending that members of the Mathematics Department who are not Mathematics Graduates access upskilling programmes, such as courses provided by the Department of Education & Skills.

The Board is also recommending to the Mathematics Department that a coordinator or convenor of the Subject be agreed and rotated regularly as advised in the Inspection Report.

The Board will take every opportunity available to appoint qualified teachers of Mathematics to ensure Quality, Teaching and learning in this subject to the highest level.