

An Roinn Oideachais agus Scileanna

Department of Education and Skills

**Subject Inspection of Mathematics
REPORT**

**The High School,
Zion Road, Rathgar,
Dublin 6.**

Roll number: 60670L

Date of inspection: 11 December 2013



**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	10 and 11 December 2013
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 eight class periods• Examination of students' work• Feedback to principal and teachers

MAIN FINDINGS

- The overall quality of teaching and learning was good or very good.
- There is excellent support from management for Mathematics in the school.
- Teachers set high expectations for their students.
- Very good collaborative practices have been established within the mathematics department but further development of schemes of work and programme plans is needed.
- Students have ample opportunities to participate in a wide range of co-curricular and extra-curricular activities.
- Where teacher instruction dominated, lessons did not allow for independent student learning or active involvement of student in their own learning.

MAIN RECOMMENDATIONS

- Methodologies that encourage students to be more active participants in their learning should be used more regularly in all lessons.
- All teachers should use questioning strategies that will challenge students while deepening their understanding of Mathematics.
- The mathematics department should collaborate to develop common procedures for the monitoring and assessment of students' written work.

INTRODUCTION

The High School, Dublin is a fee charging co-educational second-level school. It has an enrolment of 770 students. The school offers the Junior Certificate, the established Leaving Certificate and a compulsory Transition Year (TY).

TEACHING AND LEARNING

- The quality of teaching was good or very good. In the majority of lessons where good practice was observed elements of very good practice were also noted. During the evaluation most classes were undertaking revision work in preparation for upcoming in-school examinations.
- Teachers set appropriately high expectations for their students and in turn almost all students responded accordingly. Most teachers explicitly stated very clear learning objectives for lessons. All teachers should review these objectives at the end of all lessons to establish what learning has taken place.
- Methodologies observed included paired work or discovery activities and teacher directed learning. In almost all lessons, the chosen methodology was effective and there was evidence of teaching for understanding. Most effective was the use of a discovery approach to trigonometry where students worked collaboratively to arrive at a generalisation for the answer.
- In a few instances, however, greater involvement by students in their own learning would have been more productive. For example, where teacher instruction dominated the lesson this did not allow for independent student learning. The use of an alternative approach in such instances, such as group work or discovery activities would have enhanced the learning for these students.
- In most lessons there was a very good balance between global and individual questions. There were some very good examples of effective practice where teachers used higher-order questions to challenge students understanding of the topic. Most effective learning in such lessons occurred when students made connections between various strands of the mathematics syllabuses.
- In one lesson, the skilful scaffolding of questions by the teacher maximised the learning opportunity for students. In a few lessons, teachers told students what approach to use or gave the correct answer to a question. This practice does not allow students to develop competencies in the subject and should be avoided.
- Learning by students was mostly very good. The majority of students were very positive about the subject and demonstrated confidence and capabilities to answer questions posed. Commendably, teachers and students used appropriate subject specific terminology during lessons.
- Resources used were integrated effectively at key stages during the lessons. These included information and communication technology (ICT), show me boards and supplementary worksheets which were developed collaboratively.
- Many teachers are classroom based with other teachers sharing classrooms. A range of subject specific posters and student-developed materials were on display, all of which supported the learning environment. The traditional classroom layout is the preferred style used in most classrooms however, alternative classroom layouts should be considered to support the methodologies promoted by Project Maths.

- Homework was assigned in all lessons and some teachers used ICT to upload class notes and homework for their students. Students' copybooks were examined and indicated that while teachers are monitoring students' work the practice is sporadic and the presentation of some students' work is poor. It is recommended that a department policy be devised to ensure a consistent approach to monitoring and providing formative feedback to students.

SUBJECT PROVISION AND WHOLE SCHOOL SUPPORT

- The provision for Mathematics is excellent and timetabling arrangements demonstrate management's commitment to supporting the subject. This includes, an even distribution of lessons throughout the week and a targeted allocation of time particularly at senior cycle with eight periods of Mathematics timetabled for sixth year students.
- Concurrent timetabling of Mathematics takes place for all year groups. This facilitates the formation of separate higher and ordinary-level class groups, with foundation level offered when necessary. Uptake and performance in state examinations is at all levels is very good with the majority of students taking higher level at Junior Certificate and Leaving Certificate.
- Due to retirements the mathematics department has experienced much change over the past few years. Ten teachers are deployed to teach Mathematics, the majority of whom are graduates in the subject. The rotation of levels and programmes takes place and there is good capacity within the department for teachers to share in the teaching of higher level.
- Management is very supportive of continuing professional development (CPD) and teachers have participated in Project Maths in-service and additional evening CPD courses. Some teachers have successfully completed upskilling courses with other teachers planning to participate in subject specific courses.
- Students who find Mathematics challenging are identified and an additional teacher is deployed for each year group to allow for the creation of a small class which are timetabled concurrently with the year group to support these students. Additional support classes are provided by the learning support and resource departments by teachers qualified in Mathematics.
- Co-curricular and extra-curricular events are promoted and encouraged in the school and there has had much success in many Mathematics events including the Irish Mathematics Teachers Association Team Maths competition and the International Mathematics Olympiad. Links between the school and universities have been established the most recent of which has resulted in Trinity College Dublin providing support for fifth students to establish a Maths Club within the school.

PLANNING AND PREPARATION

- The position of coordinator remains with one member of the department and comes within the post of responsibility structure within the school. The role of the coordinator is clearly defined and the duties are effectively performed.
- Minutes of meetings are retained and indicate that organisational details for the curriculum, class arrangements and assessment are discussed. Future meetings should also include discussions regarding common procedures and practices for teaching aspects of the syllabus. This should also support development of strategies to support numeracy outside of the Mathematics classroom.

- The plan for Mathematics includes the organisational details for the department and schemes of work. There is evidence that much work and discussion has taken place to allow for students to develop skills and competencies in an incremental manner. Schemes of work should now be reviewed and updated in terms of syllabus strands. It is also recommended that the mathematics department collaborate to review and analyse students' performance in examinations to inform planning and teaching strategies.
- A review of the TY plan and scheme of work should be undertaken with a view to having a modular approach to the teaching of the subject. This would allow teachers to teach to their strengths and students to experience different elements of Mathematics.

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; a response was not received from the board.