An Roinn Oideachais agus Scileanna

Department of Education and Skills

Subject Inspection of Mathematics
REPORT

Chanel College
Coolock, Dublin 5
Roll number: 60550B

Date of inspection: 14 October 2015

REPORT
ON
THE QUALITY OF LEARNING AND TEACHING IN MATHEMATICS

INFORMATION ON THE INSPECTION

Dates of inspection	13 and 14 October 2015
Inspection activities undertaken • Review of relevant documents • Discussion with principal and teachers • Interaction with students	• Observation of teaching and learning during eight class periods • Examination of students' work • Feedback to principal and teachers

MAIN FINDINGS

- The quality of teaching and learning was excellent in some of the lessons observed and good in all other lessons.
- In the excellent lessons, students were empowered to lead their own learning by working through well-designed tasks that were appropriately challenging.
- There were many valuable teaching practices evident, such as clear explanations and very good use of mathematical language and keywords, in the good lessons observed.
- Higher-order questions were used, in some lessons, to encourage students to actively engage with the key learning.
- Mathematics is very well supported by school management.
- The members of the mathematics department work very well as a team.

MAIN RECOMMENDATIONS

- All lessons should include activities to encourage students to be independent learners and teachers should plan their questions for each lesson to ensure that students are actively thinking about the key learning.
- For the purpose of sharing expertise, the school's recently introduced peer observation initiative should be extended to the mathematics department and the mathematics teachers should collaboratively design lessons.
- The content of the TY programme should be amended to include Mathematics that is not on the Leaving Certificate syllabuses.

INTRODUCTION

Chanel College is a voluntary Catholic secondary school under the trusteeship of the Marist Fathers. It has a current enrolment of 603 boys. The school provides all of the programmes with the exception of the Leaving Certificate Applied (LCA) Programme. Transition year (TY) is optional for students.

TEACHING AND LEARNING

- The quality of teaching and learning was excellent in some of the lessons observed and good in all other lessons. Teachers demonstrated high levels of commitment to supporting students' learning. They engaged very well with the feedback provided and were open to ideas for development and change.
- In the excellent lessons, students were empowered to lead their own learning by working through well-designed tasks that were appropriately challenging. In these lessons, students participated with enthusiasm and experienced success.
- Students made connections between their existing knowledge and new learning. They engaged in a range of higher-order activities such as thinking, discussing, problem-solving, identifying patterns, and deriving formulae. Teachers facilitated discussion through questioning and consolidated learning. This good practice should be extended where appropriate.
- There were many valuable practices evident in the good lessons observed. Teacher explanations and instructions were clear and concise. Additionally, there was very good use of mathematical language and keywords in all lessons and students were encouraged to use this language when developing their own answers.
- Some lessons mainly relied on teacher example followed by students' completion of practice exercises. In these lessons, the inclusion of learning activities and questioning strategies to encourage students to think for themselves would have further enriched the learning.
- Some lessons included strategies that allowed students of all abilities to experience success, including those who required more challenging activities. Best practice was noted where the employed methodology facilitated students in working at their own pace. All teachers were observed to provide assistance to students experiencing difficulties with Mathematics. There was scope for further use of good differentiation strategies.
- Some teachers communicated high expectations by ensuring that the lessons progressed at a good pace, by requiring students to work independently and by expecting them to take responsibility for their own learning. These approaches were most beneficial; they encouraged students to develop persistence and resilience and should be extended to all lessons.
- Teachers worked through examples on the white board in most lessons, with the focus mainly on practicing routine operations. This approach was most successful where the examples integrated content and skills learning and where concepts were presented in the appropriate mathematical context.
- Higher-order questions were used, in some lessons, to encourage students to actively engage with the key learning. However, in other lessons, the majority of questions used were closed and this had the effect of limiting student engagement. It is recommended

that teachers plan their questions for each lesson to ensure that students are actively thinking about the key learning.

- A wide range of assessment techniques was observed in all lessons. Teachers monitored students' progress as they worked. One teacher uses an electronic system for recording student progress. This system has many benefits and consideration should be given to extending it across the subject department. Mini-whiteboards were available but not used in the lessons observed. Individual teachers should plan for the use of mini-whiteboards in their lessons.

SUBJECT PROVISION AND WHOLE SCHOOL SUPPORT

- Timetable allocation and the provision of resources, including information and communication technology (ICT), to support teaching and learning in Mathematics, are very good.
- Students are assigned to mixed-ability mathematics classes for first year; levels are set in every other year. Concurrent timetabling is provided to allow students the flexibility to change levels where necessary. Students are encouraged to study the subject at the highest level possible for as long as possible.
- There is very good provision for students with special educational needs in Mathematics.
- An analysis of the students' attainment compared to national norms is completed each year. In keeping with very good practice, student intake data is included in the evidence base to add an alternative perspective. This contributes positively to the decision-making that informs planning for Mathematics.
- A range of valuable opportunities is provided for students to participate in extra-curricular mathematics activities. *Maths Week* coincided with the evaluation and a range of a related activities was organised.

PLANNING AND PREPARATION

- The members of the mathematics department work very well as a team. The school has introduced a peer observation initiative that is working well in other subjects; it is recommended that it be extended to the mathematics department. Additionally, mathematics teachers should collaboratively design lessons specifically for the purpose of sharing expertise.
- As part of the school self-evaluation (SSE) numeracy plan, the mathematics department has designed a template to explore the approaches used in teaching routine methods with the aim of agreeing a shared approach for use in mathematics classes. In addition, the numeracy plan outlines standardised methods for calculations common to other subjects as a valuable whole-school strategy.
- There is an over-emphasis on Leaving Certificate material in the TY mathematics plan. Teaching and learning in TY Mathematics should concentrate on developing essential mathematical skills and on fostering a positive disposition to the subject. Therefore, it is recommended that the content of the TY mathematics programme be amended to include Mathematics that is not on the examination syllabuses.

- The subject plan contains good programmes of work that have been developed for each year group and level. Additionally, the mathematics plan indicates very good engagement with whole-school systems such as SSE. The subject department should now collaborate on assessment strategies and, in particular, the types of higher-order questions to be used in teaching each syllabus area. These should then be detailed in the programmes of work.

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; a response was not received from the board.

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