

**An Roinn Oideachais agus Scileanna**

**Department of Education and Skills**

**Subject Inspection of Mathematics  
REPORT**

**Coláiste Bríde,  
Presentation Secondary School  
New Road, Clondalkin, Dublin 22  
Roll number: 60122D**

**Date of inspection: 21 September 2015**



**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>	21 and 22 September 2015
<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 nine class periods</li><li>• Discussion with the learning-support co-ordinator</li><li>• Examination of students' work</li><li>• Feedback to principal and teachers</li></ul>

**MAIN FINDINGS**

- The quality of teaching varied from adequate to outstanding with the majority of lessons featuring very good teaching.
- Student learning supported by the provision of rich tasks, incisive teacher questioning and very good differentiation of the lesson content, was very good or better in the vast majority of lessons.
- Practices relating to ongoing assessment of student work including the assignment and correction of homework are very good.
- The approach to teaching, including the innovative use of Information and Communication Technology (ICT), ensures that the students are very positively disposed to Mathematics.
- Timetabling provision for Mathematics is very good and the mathematics department is very well resourced.
- Subject department planning in Mathematics is well organised and benefits from very good whole-school planning structures and excellent co-ordination.

**MAIN RECOMMENDATIONS**

- The schemes of work contained in the subject department plan should be amended to include explicit reference to agreed methods for motivating and executing the fundamental mathematical operations.
  - Elements of the Transition Year (TY) plan for Mathematics should be rewritten, and the new plan should include a functions approach to teaching algebra and a problem-solving project in geometry mediated through the use of dynamic geometry software.
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## INTRODUCTION

Coláiste Bríde is an all-girls post-primary school serving students from a broad range of socio-economic and cultural backgrounds. It offers a range of programmes appropriate to the needs of its students including the Junior Certificate, the Junior Certificate School Programme (JCSP), the TY, the established Leaving Certificate and the Leaving Certificate Applied (LCA) programme. At the time of the evaluation there were 976 students enrolled in the school.

## TEACHING AND LEARNING

- The quality of teaching ranged from adequate to excellent with the majority of lessons featuring teaching of a very high standard. Outstanding teaching was evident in two of the lessons visited.
- The best lessons were very well planned and featured the use of rich tasks designed to develop the students' understanding of the lesson content, engage them in productive group work and provide an appropriate level of challenge.
- The quality of student learning was very good or better in the vast majority of lessons. Learning was particularly good where peer teaching was facilitated and where teacher questioning ensured reflection, hypotheses development and demanded that the students defend their reasoning. Where there was scope for improvement, lesson planning focussed on content delivery rather than on the quality of learning with the result the lesson material was treated with insufficient depth.
- Practices in relation to ongoing assessment and monitoring of student progress and differentiating the lesson content were very good in almost all of the lessons visited. The most effective practice involved the use of *Assessment for Learning* techniques including effective questioning, traffic lights, peer assessment and individualised teacher support when the need arose.
- Resources, including ICT, designed to facilitate group and pair work and reinforce and consolidate student learning were incorporated effectively into many of the lessons.
- Classroom management and rapport with and between students were excellent in all lessons observed. The learning environment was very positive and the teachers' passion for Mathematics was mirrored in the students' engagement and enjoyment of the subject.

## SUBJECT PROVISION AND WHOLE SCHOOL SUPPORT

- Timetabling provision for Mathematics is very good. The time allocated is generous and the scheduling of mathematics lessons, which involves concurrent timetabling in all years apart from first year, reflects the mathematics department's and management's appreciation of the benefits of exposing students to the highest level of Mathematics for as long as possible.
- Management has been very successful in building the capacity of the mathematics department and the qualifications profile of the department is very good. The teachers are committed to their own professional development and all have fully engaged with the workshops and school visits provided to support the roll-out of Project Maths and a large number have attended post-graduate courses in their own time. However, the manner in which teachers are assigned to classes should be reviewed and the existing practice where a number of teachers are assigned to teach Mathematics to just one class group per week should be discontinued in future timetables.

- The mathematics department is very well resourced. Great credit is due to the school's board of management for the manner in which it has driven the provision of ICT to support teaching and learning and to the teachers of Mathematics who not only integrate the resources effectively in their teaching but also collaborate to produce shared resources designed to maximise the benefits of the school's extensive ICT facilities.
- In addition to the ICT facilities provided, students are encouraged to bring their own devices to school. This innovative approach is mirrored in the gradual introduction of a new instructional model exploiting the flipped classroom paradigm that allows students to review and practise key skills at home while creating more time for the development of conceptual understanding during lessons. This model is ideally suited to the approach to teaching and learning espoused by Project Maths.
- A comprehensive whole-school homework policy has been developed and the mathematics department's practices both in relation to assigning and correcting homework and assessing student progress in Mathematics are very good. The department collaborates very effectively in creating common assessments with agreed marking schemes, where appropriate, for all house examinations.
- The school's approach to identifying and supporting students with special education needs or requiring learning support in Mathematics are characterised by a real desire to enhance the quality of learning in Mathematics for those who need it most. An appropriate range of interventions, customised to meet individual needs if necessary, are effectively implemented and subject to ongoing review. Students identified as being more able in Mathematics are also provided with appropriate supports.

#### **PLANNING AND PREPARATION**

- Subject department planning in Mathematics is very well advanced and is supported by very good whole-school planning structures, excellent co-ordination and an admirable degree of collaboration between the members of the department.
- The department's planning is informed by a comprehensive analysis of student performance in the certificate examinations, the targets set as part of its action planning process and the department's wish to enhance student attainment in, and enjoyment of, Mathematics. Planning culminates in the preparation of an annual report by the department to the school's board of management.
- A very good subject department plan for Mathematics, containing extensive schemes of work, is in place. The schemes of work reflect the revised syllabuses, are very well constructed and allow for a clear and systematic delivery of the curriculum. However, the schemes could be further enhanced if they included explicit reference to agreed methods for motivating and executing the fundamental mathematical operations students will encounter and need to master in junior and senior cycles.
- Individual lesson planning, including planning for the integration of resources, was very good in almost all cases and outstanding in a number. In the very best cases lesson planning focussed on developing student learning, exploiting clear mathematical contexts for the material being covered and engendering solution curiosity as a means of motivating lesson content.
- A separate, comprehensive plan for Mathematics in TY is in place and elements of it, particularly relating to area and volume at ordinary level, are very much in keeping with

the approach adopted by Project Maths. Other areas of the plan, at all levels, need to be rewritten. In particular, a functions approach to teaching algebra should be promoted and a problem-solving project in geometry mediated through the use of dynamic geometry software should be introduced.

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

# **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 welcomes the subject inspection of Maths and is delighted to see it is consistent with and reflects the high standards set by previous inspections.

The report on teaching and learning was very positive and highlighted the varied methodologies employed in the classroom. The Maths Department were particularly pleased to have student learning acknowledged to be very good or better particularly where peer teaching was facilitated as this is a tool that has been promoted by the Maths Department in Coláiste Bríde. The team was also happy to see that the Inspectorate noted that the learning environment was very positive and the teachers' passion for maths was mirrored in the students' engagement and enjoyment of maths.

The usage of ICT facilities is a central element in the teaching of Maths in Coláiste Bríde. We are one of a few schools in Ireland using award winning technology which is highly effective in delivering a deep rooted understanding of mathematical concepts and offers real-world content/ simulations to spark enthusiasm for the subject among students.

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

Since the visit of the Inspectorate, the Maths Department attended an in-service which targeted agreed methods in the teaching of algebra. These agreed methods have already been added to the Subject Department Folder and it is planned that similar agreed methods for motivating and executing mathematical operations will be added in due course.

The Maths Department plan for 2016/ 17 will focus on rewriting some elements of the Transition Year plan to include a functions approach to teaching algebra and an appropriate problem – solving geometry project, incorporating the use of geometry software (Geogebra).

The Board and the Maths Department acknowledge that the quality of teaching in the majority of lessons featured teaching of a very high standard with outstanding teaching evident in two lessons visited. Peer mentoring is already in place and that will continue in order to keep raising the standard in keeping with the school focus on improving teaching and learning.

The Board of Management welcomes the very positive outcomes for the school in relation to subject provision and whole school support which highlights the extent that co-curricular and cross curricular activities support the learning within the classroom.

The Board congratulates the Maths Department on the excellent findings regarding planning and preparation which is “reflective and focuses on improvement”.

The Board of management wishes to thank the inspector for his positive engagement with staff.