

An Roinn Oideachais agus Scileanna
Department of Education and Skills

Subject Inspection of Mathematics
REPORT

Coláiste Phádraig C.B.S.
Lucan, County Dublin
Roll number: 60264A

Date of inspection: 17 October 2013



AN ROINN | DEPARTMENT OF
OIDEACHAIS | EDUCATION
AGUS SCILEANNA | AND SKILLS

**REPORT
ON
THE QUALITY OF LEARNING AND TEACHING IN MATHEMATICS**

INFORMATION ON THE INSPECTION

Dates of inspection	16 th and 17 th October 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 seven class periods• Examination of students' work• Feedback to principal and teachers

MAIN FINDINGS

- While the quality of teaching and learning was very good or good in the majority of lessons, there was significant scope for improvement in one lesson.
- Lesson planning was very good overall, with most teachers preparing a good range of activities to engage students, to encourage them to take responsibility for their own learning and to gain an appreciation for Mathematics.
- Students participated and engaged very well with the work of most lessons and their contributions indicated very good learning.
- Whole-school support for Mathematics is very good.

MAIN RECOMMENDATIONS

- The very good pedagogical practices described in this report should be extended through collaboration and through developing a strategic plan for Mathematics in the school.
 - The principal and deputy principal should observe lessons in the interest of overseeing and supporting improvement in teaching and learning.
 - Alternative material should be included in the Transition Year (TY) mathematics plan that will facilitate students in developing essential problem solving, analytical and critical thinking skills and avoid the need for repetition of the same coursework material in fifth year.
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INTRODUCTION

Coláiste Phádraig C.B.S, Lucan is a voluntary Catholic secondary school for boys with a current enrolment of 727 students. TY is provided as an optional programme.

TEACHING AND LEARNING

- Seven lessons were observed during the evaluation. The quality of teaching and learning was very good in four lessons and good in two. There was significant scope for improvement in one lesson.
- Lesson planning was very good overall, with most teachers preparing a good range of activities to engage learners, to encourage them to take responsibility for their own learning and to gain an appreciation for Mathematics. It is recommended that the good practice outlined be extended to all lessons.
- The main methodologies used were project work and teacher instruction followed by students completing tasks individually or in groups. Best practice was noted where students collaborated to discuss mathematical ideas, and to problem solve. This collaboration facilitated increased levels of student involvement and provided opportunities for students to develop the necessary skills for solving *Project Maths* examination questions. More widespread use of this best practice and the inclusion of investigative and discovery methodologies are recommended.
- Most teacher explanations were clear, conceptual and accurate. Some teacher explanations lacked sufficient accuracy and depth, which, consequently, reduced the quality of students' learning. The integrity of the mathematical concepts taught should be maintained in all explanations. In addition, the strategic elements of the work of lessons and the reasoning behind the mathematics taught should be more fully explored.
- Questioning was used very effectively in almost all lessons to involve students and to assess learning. Most lessons included the use of higher-order questions to facilitate the thorough exploration of concepts. This is very good practice. There was scope in some lessons and significant scope in one lesson to use questioning to achieve what is described above.
- In some lessons students were encouraged to think independently and to work on unfamiliar material. This is excellent practice and should be incorporated into the everyday work of all mathematics lessons.
- Students participated and engaged very well with the work of most lessons. Their contributions indicated very good learning. The atmosphere in most classrooms visited was warm and encouraging and there was an emphasis on making Mathematics enjoyable for students.
- The relationship between the students and their teacher was poor in one classroom visited. The students' behaviour was disruptive and the quality of their learning was poor. In this lesson it was evident that there were weaknesses that are significantly impacting on student learning. Therefore, it is recommended that the principal and deputy principal observe lessons to oversee and support improvement.
- There was good attention given to developing students' literacy skills with most teachers highlighting key words and using their meanings to explain mathematical concepts. Teachers should write the key words on the board and students should note them in their copybooks in order to consolidate this good work.

SUBJECT PROVISION AND WHOLE SCHOOL SUPPORT

- Timetable provision for Mathematics and arrangements for level choice are very good. There is also very good provision of information and communication technology (ICT) and resources for teaching and learning.
- School management facilitates and encourages teachers to participate in continuing professional development (CPD).
- The school introduced mixed-ability base groups for first years in 2009. The analysis of student attainment in the Junior Certificate examinations indicates that this move has contributed positively to a notable increase in the uptake of higher-level Mathematics. At the beginning of second year, students are assigned to higher and ordinary-level groups for Mathematics. When more than one class group is formed within the year group for either higher or ordinary level, the classes are arranged in order of ability. A top higher group, a second from the top, and so on, is then formed. It is recommended that these classes be formed on a more mixed-ability basis.
- Senior management and the mathematics teachers ensure that teaching and learning in Mathematics is informed by the analysis of certificate examination results each year. Students also sit standardised tests before starting in first year. It is recommended that the results of standardised tests be used as a baseline for making judgements about students' attainment in Mathematics.

PLANNING AND PREPARATION

- Planning time for the mathematics department is provided monthly, and the mathematics teachers work well together as a team. It is recommended that their collaboration should now focus on sharing best practice in teaching and learning, and on developing a strategic plan for Mathematics in the school.
- The mathematics teachers have worked hard in planning for the subject. Good programmes of work for each year group and level have been created to incorporate the new syllabuses. However, while the teaching and learning plans produced by the *Project Maths* development team are used in some lessons, this is not recorded in the teachers' schemes of work. It is recommended that the existing schemes be developed to include details of the resources, methodologies and the *Project Maths* teaching and learning plans used in teaching the various sections of the coursework.
- The TY plan comprises mainly Leaving Certificate syllabus material. As TY is optional this material will need to be covered again in fifth year. It is recommended that alternative material be included that will facilitate students in developing essential problem solving, analytical and critical thinking skills and that will avoid the need for repetition in fifth year. Modules on Applied Mathematics, financial Mathematics and Computer Programming are suggested.

The draft findings and recommendations arising out of this evaluation were discussed with the 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.

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 Coláiste Phádraig Lucan wish to acknowledge the findings of the recent report on the quality of learning and teaching in Mathematics in the school.

The report identifies the very good work which takes place in the teaching of Mathematics in the school. The board intends that the main recommendations outlined will be followed through and complements the teachers on the good work they are doing.

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 Mathematics Department will extend the pedagogical practices throughout Mathematics in the school. This will be done through collaboration of the teachers in the department and through departmental meetings during this year.

Observation of all Mathematics classes will be undertaken either by the Principal or Deputy Principal, following consultation with the Mathematics department.

This recommendation will be a demanding and onerous task if it should become standard practice for all teachers in all subjects following inspections. This will be re-evaluated at the end of each year.

The provision of alternative material for the Transition Year mathematical programme will be extended for the 2014/2015 academic year. The conditions for the current year were influenced by the non-completion of all strands of the New Project Maths curriculum by the current Transition Year students when they were in 3rd Year. It was considered vital that these missing strands be visited and completed as part of the Transition Year programme. The ability to include “alternate” elements which are “non-exam oriented” was therefore limited. This will be corrected for subsequent years.