

An Roinn Oideachais agus Scileanna
Department of Education and Skills

Subject Inspection of Mathematics
REPORT

Scoil Mhuire
Strokestown, County Roscommon
Roll number: 65100S

Date of inspection: 22 October 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	21 and 22 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 eight class periods (one double and six single)• Examination of students' work• Feedback to principal and teachers

MAIN FINDINGS

- The quality of teaching and learning was good or very good in almost all of the lessons observed with some exemplary practices noted. Weaknesses were evident in a small minority of lessons.
- Teachers demonstrated high levels of competence in the use of information and communication technology (ICT) in lessons.
- In some instances, there was a need to further differentiate exercises and to make further use of active and collaborative learning methodologies.
- Whole-school support for Mathematics is very good.
- Provision for students encountering difficulty with Mathematics is of high priority.
- Teachers have put a significant amount of work into compiling a comprehensive subject plan.

MAIN RECOMMENDATIONS

- Strategies for differentiation should be further developed and implemented in all lessons.
 - The use of active and collaborative learning methodologies should be extended.
 - The Transition Year (TY) plan should be revised and further developed to include more context-based material and a more appropriate mix of syllabus and non-syllabus content.
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INTRODUCTION

Scoil Mhuire is a co-educational voluntary secondary school under the trusteeship of Catholic Education, an Irish Schools Trust (CEIST). The school is the sole provider of post-primary education in the town of Strokestown and enrolment currently stands at 469 students. The programmes offered are the Junior Certificate, a compulsory TY, the Leaving Certificate Vocational Programme (LCVP) and the established Leaving Certificate.

TEACHING AND LEARNING

- The quality of teaching and learning ranged from good to very good in almost all of the lessons observed with some examples of exemplary practices noted. Where weaknesses were evident in a small minority of lessons, they stemmed from a lack of involvement by students in their learning and from an over-emphasis on mechanical procedure rather than on concept development and contextual positioning.
- Best practice was observed in lessons where students were required to complete a range of tasks and where a discovery based approach was predominant. In other lessons, there was a need for some rebalancing of the lesson structure in favour of more student activity rather than an over-emphasis on teacher presentation.
- ICT was used as a teaching aid in all of the lessons observed and teachers demonstrated high levels of competence in the use of the available technology. Graphing software and animated presentations were used to good effect in lessons and facilitated good progress.
- In some lessons, exercises were structured in a way that provided an incremental level of challenge allowing all students to achieve while providing sufficient challenge for the more able students. Such practices should be extended to all lessons. It is therefore recommended that teachers plan and implement differentiated teaching strategies that provide sufficient challenge across the full range of student ability.
- Where collaborative tasks were incorporated into lessons, students demonstrated impressively high levels of engagement. Such activities promote higher-order learning and should be used more widely in lessons.
- In the majority of lessons observed, teacher explanations were clear and conceptual and the language used was accurate and unambiguous. In a minority of lessons, greater care was needed in the language used to describe basic algebraic operations such as the use of additive and multiplicative inverses.
- Students' literacy development was well supported by the widespread focus on subject-specific terminology. This is in keeping with a whole-school approach to literacy that is being developed as part of the school self-evaluation process.
- Questioning was used to good effect in most lessons, resulting in high-quality dialogue in many cases. In the instances when questioning showed significant strengths, teachers skilfully varied lower and higher-order questions, used follow-up questions and framed questions using a discovery approach.
- In all classrooms, the visual environment was enriched by displays of mathematical content in the form of relevant posters and charts. Such displays are a good support to students and were referred to in some lessons as a means of efficiently revisiting previously covered concepts during lessons tasks.

- In all of the lessons observed, teachers had a very good rapport with students, mutual respect was evident and the learning environment was positive and supportive of student learning.

SUBJECT PROVISION AND WHOLE SCHOOL SUPPORT

- Management is very supportive of the mathematics department. Attendance at continuing professional development (CPD) events for *Project Maths* is facilitated for all teachers of Mathematics. In addition, teachers benefit from the provision of a wide range of ICT and other resources. The considerable ICT expertise among the teaching staff has been well exploited to date and some staff members have delivered CPD to colleagues on the use of ICT in the classroom. This is highly commended and the results of this input were very evident in lessons.
- The amount of time allocated to the teaching of Mathematics is very good, particularly in fifth and sixth-year where students have six periods of Mathematics per week. At present, third-year students do not have mathematics class on a Tuesday. Future timetabling should aim to provide daily contact with Mathematics for all students in line with Circular 0058/2011 and Circular 0025/2012.
- Students are assigned to mixed-ability mathematics classes in first year. Throughout first year, there is a facility whereby students experiencing considerable difficulty with Mathematics can be provided with more focussed support in a smaller class environment. This provision extends to other years also and is evidence of the strong focus placed on student support in the school. In some year groups, team teaching should be considered as an alternative form of provision for some of these students. After first year, students are taught in level-specific classes where concurrent timetabling of mathematics lessons allows students to choose a level appropriate to their ability.

PLANNING AND PREPARATION

- The mathematics teachers present as a dedicated team, committed to the attainment of high standards in teaching and learning. Teachers engage in the process of collaborative planning, both on a formal and informal basis. Comprehensive minutes of department meetings are retained in the subject planning folder.
- The subject plan contains schemes of work for each year and for each level. These schemes of work are laid out in tabular format and are stated in terms of learning outcomes in line with best practice. Suggested teaching methodologies, literacy and numeracy strategies, resources and assessment modes are also included in these schemes of work. Staff are commended for their collegial approach to subject planning and for the considerable amount of work that has gone into the production of this plan.
- The TY plan contains mainly topics drawn from the syllabuses for the Certificate examinations. This plan should be revised and further developed to include more context-based material and a more appropriate balance between syllabus and non-syllabus content.
- Teachers have engaged in a comprehensive analysis of students' performance in the Certificate examinations over the past number of years. Strengths and areas for improvement have been identified and action plans have been put in place where

necessary. The uptake of higher-level Mathematics has been good in recent years and results have been of a consistently good standard across all levels.

- Teachers' individual preparation was of a high standard in all of the lessons observed. Additional resources, including ICT resources, were sourced in advance and were integrated at key points during lessons. Future department planning should now focus on the further tailoring of resources to individual topics and the further sharing of teaching methodologies among department members.

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 of the school was given an opportunity to comment on the findings and recommendations of the report; the board chose to accept the report without response.