An Roinn Oideachais agus Scileanna

Department of Education and Skills

Subject Inspection of Mathematics
REPORT

Scoil Mhuire Community School
Clane, County Kildare
Roll number: 91372D

Date of inspection: 15 May 2012

AN ROINN OIDEACHAIS AGUS SCILEANNA | DEPARTMENT OF EDUCATION AND SKILLS

REPORT
ON
THE QUALITY OF LEARNING AND TEACHING IN MATHEMATICS

INFORMATION ON THE INSPECTION

Dates of inspection	14th and 15th May 2012
Inspection activities undertaken • Review of relevant documents • Discussion with principal and teachers • Interaction with students	• Observation of teaching and learning during ten class periods • Examination of students' work • Feedback to principal and teachers

MAIN FINDINGS

- Overall a high standard of teaching and learning was observed during the evaluation and in some lessons the standard was very high.
- Teacher explanations and instructions were clear and all lessons were well planned.
- Very good use of information and communications technology (ICT) was observed in most lessons.
- Very good attention was paid in most lessons to encouraging students to fully understand the concepts presented.
- Whole-school support for Mathematics is very good.
- There is very good practice in relation to planning for Mathematics.

MAIN RECOMMENDATIONS

- The use of active methodologies, problem solving activities and a discovery approach in lessons should be increased.
- Opportunities should be provided in all lessons for students to achieve deep understanding of the concepts taught and to develop the problem solving and critical thinking skills that are essential for success in Mathematics.
- The good differentiation practices noted in some lessons should be extended to all lessons.

INTRODUCTION

Scoil Mhuire, Clane, is a co-educational community school with 929 students. The school offers the Junior Certificate, the established Leaving Certificate, the Leaving Certificate Vocational Programme (LCVP) and the Leaving Certificate Applied (LCA) programme. Transition Year (TY) is optional for students.

TEACHING AND LEARNING

- Ten lessons were observed in the evaluation. Overall a high standard of teaching and learning was evident and in some lessons the standard was very high. Teacher explanations and instructions were clear and all lessons were well planned.
- The learning objectives were communicated to students at the start of most lessons and consolidation activities took place throughout; this very good practice contributed to the success of the lessons.
- The main methodology used was teacher example followed by individual or group student exercises. While this approach was effective, there was scope in some lessons for a wider variety of methodologies to be used. It is, therefore, recommended that active methodologies, problem solving activities and a discovery approach be used to a greater extent than was observed.
- Very good use of ICT in the form of *Geogebra*, PowerPoint, animated algebra activities, and video clips, was evident in most lessons. Best practice was seen where the students themselves engaged with the ICT in the classroom.
- In some lessons there was scope for the use of mnemonics to assist students in remembering routine operations and it is suggested that these be considered for inclusion.
- Very good attention was paid in most lessons to encouraging students to fully understand the concepts presented by teachers facilitating a thorough and rigorous treatment of the lessons' material. In other lessons, however, the activities focused on students mastering a particular technique or method through practice without full exploration of the ideas underlying the Mathematics involved. It is strongly recommended that opportunities be provided in all lessons for students to achieve deep understanding of the concepts taught.
- Best practice in relation to differentiation of learning occurred where the activities chosen allowed each student to work at his or her own pace and where additional work was provided for the students who had finished their work. However, in some cases students, who had either finished before their classmates or had correct homework while homework corrections were worked through on the board, were without additional work to do for a significant period of class time. It is, therefore, recommended that the good differentiation practices noted in some lessons be extended to all lessons.
- Excellent practice in one lesson and very good practice in some others was noted in relation to encouraging students to think mathematically for themselves. In three lessons however, teachers over-supported students by completing all or some of the strategic elements of the problems to be solved. The students were simply expected to complete the routine aspects of the work at hand. It is recommended that students be provided with appropriate opportunities to develop the problem solving and critical thinking skills that are essential for success in Mathematics. This is particularly important in light of the introduction of *Project Maths*.

- There was good practice observed in relation to assessment. Teachers monitored progress through questioning and observation. In some cases very good use was made of higher-order questions and probing discussions that challenged students to examine and explain their reasoning. There is scope for further use of such strategies and this is recommended.
- High levels of student participation and engagement were observed. The relationships between students and their teachers were conducive to encouraging confidence with the subject.

SUBJECT PROVISION AND WHOLE SCHOOL SUPPORT

- Timetable allocation and the provision of resources including ICT to support teaching and learning in Mathematics are very good.
- Students are assigned to mixed-ability mathematics classes for first year and for TY; levels are set in every other year. Concurrent timetabling is provided in all years where students are separated into higher and ordinary level groups to allow each student the flexibility to study the subject at a level appropriate to his or her ability. This is all good practice.
- School management actively encourages teachers to engage in continuing professional development (CPD) and facilitates attendance at subject specific and whole-school CPD events.
- A wide range of valuable opportunities are provided for students to participate in extracurricular activities in Mathematics.

PLANNING AND PREPARATION

- There is very good practice in planning for Mathematics. Monthly meetings are provided for the members of the department to plan for the subject. There are two subject co-ordinators and in keeping with good practice these positions are rotated amongst the members of the mathematics teaching team. The high level of collaboration amongst mathematics teachers is evident from the review of the minutes of planning meetings which indicate that valuable discussion and evaluation of effective teaching methodologies take place.
- A very good subject plan has been created and it comprises all the relevant policy documents and excellent programmes of work for each year group and level. It is good that work on planning for the implementation of *Project Maths* is well advanced. The department's programmes of work and the teaching and learning plans provided by the *Project Maths* development team are used as valuable resources in lesson planning. It was evident throughout the evaluation that the quality of subject planning has had a positive effect on students' experience in the classroom.
- In line with best practice action planning with a focus on self-evaluation is a feature of the work of the mathematics department with respect to the implementation of ICT. This valuable aspect of planning should be extended to other areas of the delivery of the subject.

- The programme for TY Mathematics includes non-syllabus topics and is in keeping with the aims of TY. It is also good that alternative approaches are used in the delivery of TY Mathematics. A common level of Mathematics is taught in TY and consequently the range of abilities in TY classes is quite wide. It is recommended that learning be differentiated for these groups through choosing activities that allow students to work at their own pace and through ensuring that material suitable for a range of abilities is chosen.

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.

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