An Roinn Oideachais agus Scileanna

Department of Education and Skills

Subject Inspection of Mathematics
REPORT

CBS Secondary School
New Ross, County Wexford
Roll number: 63600F

Date of inspection: 1 December 2011

AN ROINN OIDEACHAIS AGUS SCILEANNA | DEPARTMENT OF EDUCATION AND SKILLS

REPORT
ON
THE QUALITY OF LEARNING AND TEACHING IN MATHEMATICS

INFORMATION ON THE INSPECTION

Date of inspection	1 December 2011
Inspection activities undertaken • Review of relevant documents • Discussion with principal and teachers • Interaction with students	• Observation of teaching and learning during five class periods • Examination of students' work • Feedback to principal and teachers

MAIN FINDINGS

- The quality of teaching and learning was mostly good or very good with a few instances where scope for development was noted.
- There is very good support for Mathematics in terms of timetabling, continuing professional development and the procurement of resources.
- The use of a varied range of methodologies in some lessons was very effective but possibilities for extending this exist.
- The quality of individual planning was good but further work should be undertaken to collate all documents into a single plan for Mathematics.

MAIN RECOMMENDATIONS

- The inclusion of a greater range of active methodologies that will encourage all students to become active participants in their learning should become a feature in all lessons.
- The range of questioning styles and strategies used in some lessons needs to be reviewed so all students develop higher-order thinking skills.
- Collaborative planning for Mathematics should be progressed for the long-term development of the subject within the school.

INTRODUCTION

CBS Secondary School, New Ross is a co-educational school with a student population of 250. The school offers the Junior Certificate, the Leaving Certificate Vocational Programme and established Leaving Certificate. In addition, an optional Transition Year programme is available.

TEACHING AND LEARNING

- The quality of teaching observed ranged from mostly very good or good practice to an instance in which there was scope for development.
- The quality of learning varied but in most instances was of a good standard. In most lessons, students were sufficiently challenged and were active participants in their own learning.
- Most lessons began with the clear stating of learning objectives. In such lessons, effective use was made of the available time, with the creation of good learning opportunities for students and good progress was made.
- Many lessons effectively used links between students' prior learning and the setting of Mathematics in real-life contexts. In some instances cross-curricular links were established. In most lessons, time was given to checking students understanding of mathematical terminology, which is good practice.
- In most instances, the chosen teaching and learning methodology was very effective. Methodologies observed included good quality whole-class teaching, some group activities and student demonstration. The investigative approach, for example, was used to good effective in a trigonometry lesson when students were given a range of materials including clinometers, meter rulers and worksheets and used the basketball court to gather data for calculations. In another instance, however, where some students became passive during the lesson, learning would have been enhanced had a more appropriate methodology been chosen.
- Questioning strategies used were mostly effective. In most lessons, there was a very good balance between higher and lower-order questioning. However, where the predominant questioning strategy involved lower-order type questions, students were not sufficiently challenged. It is recommended that a wider range of questioning type and strategies be used in all lessons to encourage students to develop higher-order thinking skills and become more active in their own learning.
- A range of resources was integrated effectively in most lessons. For example, 'show-me boards', prepared worksheets and information and communication technology (ICT) were effectively used to support students' learning.
- In most lessons, students were positive about their studies and frequently volunteered to provide a solution to a question posed by their teacher. Many teachers are classroom-based and resources and supplementary materials such as posters and student work were displayed. However, as this was not always the case attention in this area is recommended as such visual aids add to and can be used as reinforcement for learning in the classroom.
- Agreed assessment practices and procedures are detailed within the mathematics department plan and include a range of assessment models. However, there is evidence that systematic regular end-of-topic assessments of students are not being undertaken by all teachers. This matter should be addressed. Regular assessment of students work is

necessary as it will not only give an indication of student competencies in a topic but also inform future planning for the class in general.

- In all lessons observed, homework was assigned and was reflective of work undertaken in the lesson. The monitoring of students' homework and class work is generally conducted by teachers as they circulate during the lesson when oral feedback is given. In some instances, written comments are included in students' copies; however, there is a need for greater consistency in this practice.

SUBJECT PROVISION AND WHOLE SCHOOL SUPPORT

- Practices and procedures in relation to the organisation of Mathematics are very good. This includes an appropriate allocation of time to the subject and concurrent timetabling of class groups from first year.
- The mathematics department comprises four teachers. While rotation of levels and programmes is facilitated, only one teacher takes responsibility for teaching higher level in senior cycle. Ongoing monitoring is necessary to ensure that there is sufficient capacity within the department to provide Mathematics to the highest possible level.
- On entry, students are assigned to mixed-ability classes. In recent years, the practice has been to rearrange first-year students into set ability groups following a formal Christmas assessment. However, this practice is currently under review with the reported plan to delay the setting of students into ability levels until later into the year. This is to be welcomed.
- Management is commended for facilitating teachers' attendance at continuing professional development in-service. In addition, management's willingness to support teachers' annual subscription to the Irish Mathematics Teachers Association (IMTA) is acknowledged.
- Requests for resources are processed through management. Many teachers retain resources within their own classroom or have access to mathematics resources which are centrally retained in one classroom. An updated listing of the available resources should be included within the mathematics department plan.
- Students in need of numeracy support are identified and models of support such as withdrawal or one-to-one support is offered as deemed appropriate. Numeracy support is generally provided by a mathematics teacher. Communication between those providing numeracy support and the class teacher should be formalised to allow for regular monitoring and assessment of students progress and ongoing needs.
- Students have opportunities to access co-curricular and extracurricular activities in Mathematics through school events organised during Maths Week and also through participation in Problem Solving for Irish Second level Mathematicians and Maths Olympiads. Other events such as participation in IMTA competitions are encouraged as it would further support students in their mathematics education and promote the subject within the school.

PLANNING AND PREPARATION

- Teachers' individual planning for lessons was generally good; most teachers had the necessary supplementary materials to hand.

- Collaborative planning to develop programmes of work with agreed learning outcomes should be progressed and allow for the development of one plan for the continuum of learning for students in Mathematics. Such planning should also allow for the synchronisation of topics to prevent gaps in student learning should they change a level.
- Areas for further development during upcoming planning meetings should include the discussion and development of strategies for the teaching of common topics, and the sharing of best practice in teaching strategies and questioning styles.
- Teachers retain very good records of student attendance.

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, and the response of the board will be found in the appendix of this report.

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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 in very happy with the professionalism and thorough manner in which the inspection was carried out and wishes to thank the Inspector for her work. The Board is extremely happy to have the good work of the Mathematics teachers affirmed.

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 Board of Management will endeavour to implement all the recommendations made by the Inspector at its earliest convenience.