An Roinn Oideachais agus Scileanna

Department of Education and Skills

Subject Inspection of Mathematics
REPORT

Saint Anne’s Secondary School
Tipperary, County Tipperary
Roll number: 65500L

Date of inspection: 13 April 2011
REPORT ON THE QUALITY OF LEARNING AND TEACHING IN MATHEMATICS

INFORMATION ON THE INSPECTION

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<th>12 and 13 April 2011</th>
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<td><strong>Inspection activities undertaken</strong></td>
<td><strong>Observation of teaching and learning during seven class periods</strong></td>
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<td>• Review of relevant documents</td>
<td>• Examination of students’ work</td>
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<td>• Discussion with principal, mathematics teachers and learning support teacher</td>
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MAIN FINDINGS

- The quality of teaching learning observed during the evaluation varied but was generally good, with very good practice in some lessons and shortcomings in a few areas.
- Most lessons were well planned which allowed for good pace and appropriate progress to be made; however, in some lessons this was not the case.
- Whole-school support for Mathematics is very good and characterised by very good timetabling arrangements and support from management for subject planning and attendance at in-service.
- Homework is assigned on a regular basis to students; however, the monitoring and annotation by teachers of homework varies.

MAIN RECOMMENDATIONS

- Teachers should incorporate a greater range of methodologies and higher-order questioning strategies into the teaching of Mathematics.
- Planning meetings should focus on the inclusion of learning outcomes in the schemes of work, discussion and agreement on teaching strategies for topics and the sequencing of topics between levels.
- The analysis of state examination outcomes, carried out by members of the mathematics department, should be used to inform planning for the subject, particularly in relation to the uptake of ordinary level at junior cycle.
- A revised transition year (TY) programme should be developed to provide greater variety of learning experience for students which would also allow clear distinction between examination and non-examination material, particularly for higher level.
INTRODUCTION

St. Anne’s Secondary School is a voluntary school that has a student population of 360 girls. The school offers the Junior Certificate, the established Leaving Certificate and the Leaving Certificate Vocational Programme. In addition, an optional Transition Year programme is also available in senior cycle. The board of management was given an opportunity to comment in writing on the findings and recommendations of the evaluation; a response was not received from the board. 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.

TEACHING AND LEARNING

• Effective lessons were characterised by the establishment of clear and focused learning objectives, good learning opportunities and suitably chosen methodologies. In such lessons, teacher questioning was probing and allowed students to become active in their own learning.

• In almost all instances, the pacing of lessons was appropriate; however, on occasion poor pacing did not allow sufficient progress to be made by students, other than in the correction of homework. In such instances, it is recommended that greater attention be given to lesson structure and pace when planning lessons.

• Mathematics terminology and notation, used by both the teacher and students, was very good and indicated frequent exposure. In many lessons, very good use was made by teachers of linkages between different areas of the syllabus and setting Mathematics in context.

• Traditional whole-class teaching was the preferred methodology and was in most instances of a good standard. Effective use of a student-centred approach, as observed in one lesson, allowed for very good teacher-student interactions. However, greater use of methodologies encountered by teachers during attendance at national in-service of Project Maths is advised.

• In some lessons, questioning strategies used were of a high standard and typically characterised by students assimilating information, deliberating about a solution and justifying their answer. However, in some lessons, lower-order questions dominated interactions between teachers and students. Teachers should expand the range of questioning strategies to ensure that students are being challenged sufficiently during the lesson.

• In the majority of lessons, the atmosphere was very positive and most teachers have developed a very good rapport with their students which is conducive to a good learning environment. Students were generally eager to participate in their learning. Interactions between the inspector and students were positive with students displaying very good knowledge and understanding of the mathematical concepts.

• Teachers are generally classroom based and resources are mostly retained within these rooms. In all lessons visited, the textbook and examination papers were the main resources used. In one instance, very good use was made of three dimensional materials to discuss volume and surface area. However, the use of a varied range of differentiated supporting materials would have enhanced learning in some lessons.
SUBJECT PROVISION AND WHOLE SCHOOL SUPPORT

- Timetabling arrangements for Mathematics are very good. This allows for very good provision of time to all year groups, daily contact with the subject and concurrent timetabling of all mathematics classes from second year onwards.

- Five teachers are deployed to provide the mathematics curriculum. Most teachers are deployed in line with their subject specialism; however, the long-term availability of personnel to provide Mathematics to the highest possible level will require ongoing monitoring and attention by management.

- There is very good support by management for Mathematics including facilitating teachers to access continual professional development courses and the provision of a department budget.

- Arrangements for student placement in class groups are very good. In junior cycle, first-year students are placed in mixed-ability groups. Following common assessments, second-year students are assigned to groups of higher or ordinary levels, with foundation offered on a needs basis. The uptakes of level are generally good; however, caution is advised as there is evidence emerging from past state examination outcomes that some students may be able for a higher level. This is an area that requires further attention and action.

- Students are appropriately monitored through regular school-based assessments with their achievements communicated to parents. Students receive feedback on their performance in Mathematics orally from some teachers, while other teachers provide written comments in students’ copies.

- A wide range of appropriate supports are in place for students who find Mathematics challenging or for students who are gifted. Teachers provide students with opportunities to access Mathematics in different contexts such as mathematical events during Math Week. Further promotion of Mathematics could include participation in competitions such as Team Math.

PLANNING AND PREPARATION

- Good progress has been made to date on subject planning. Time has been allocated by management for teachers to meet. Records of meetings detail discussions and decisions taken including agreed curriculum content.

- The quality of schemes of work is generally good but should be augmented with the inclusion of learning outcomes to identify clearly the incremental development of students’ subject skills and knowledge.

- Long-term planning for the future development of Mathematics is lacking. The identification of specific goals, with associated action plans, should be established to allow for progression. For example, some planning time should be dedicated to discuss and agree appropriate strategies for the integration of information and communication technology (ICT) into the teaching and learning in Mathematics.

- The TY plan for Mathematics offers ordinary-level students opportunities to sample new concepts and review prior knowledge, which is good. The higher-level programme tends to focus on leaving certificate material which is not in line with the programme’s mission. A review of the plan should be undertaken to allow for this area to be addressed.
Almost all teachers presented individual planning documents which were of a good standard and followed the common department plan.

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

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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

School management were pleased at the inspection report’s acknowledgement of the very good timetabling arrangements and facilitation of teacher CPD that is in place. Members of the Maths department were also pleased at the favourable comments in the report with regard to pacing of maths lessons and the student use of appropriate maths terminology and notation, the good rapport between teachers and students and the acknowledgement by the report that the students displayed very good knowledge and understanding of mathematical concepts. The report also endorsed the wide range of supports for both students who are gifted and for those who find maths challenging.

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 timing of the inspection coincided with the tender stage of purchasing ICT equipment. Since then all maths teachers have received data projectors and tablets and have all attended in-service on the best use of such technologies. In addition Maths teachers now share resources using ‘dropbox’.

Extra planning meetings are taking place this year to facilitated by the Croke Park 33 hours. The TY syllabus has been modified in line with recommendations.

Whole staff in-service on the art of asking thought provoking questions has been secured for January.

Maths week was celebrated with puzzles and competitions. During the week we also organised two speakers. A speaker on ‘Maths and Magic’ and another on the importance of Maths for a wide variety of careers.

One member of the Maths department in completing Maths Modules (MST121, MS221 and MS208) with the Open University which is recognised as the standard required to teach Higher Level Maths to LC.