An Roinn Oideachais agus Scileanna

Department of Education and Skills

Subject Inspection of Mathematics and Applied Mathematics
REPORT

Castletroy College
Castletroy, County Limerick
Roll number: 76073G

Date of inspection: 21 February 2013

AN ROINN OIDEACHAIS AGUS SCILEANNA | DEPARTMENT OF EDUCATION AND SKILLS

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

INFORMATION ON THE INSPECTION

Dates of inspection	**20 and 21 February 2013**
Inspection activities undertaken • Review of relevant documents • Discussion with principal, deputy principals and teachers • Interaction with students	• Observation of teaching and learning during twelve class periods (one double and ten single) • Examination of students' work • Feedback to principal and teachers

MAIN FINDINGS

- The quality of teaching and learning ranged from good to very good with some examples of exemplary practice observed.
- A key strength of the mathematics team is its very effective use of higher order questioning strategies.
- Very good use was made of active and collaborative learning methodologies in a significant minority of lessons while there was scope to extend their use in other lessons.
- The role of information and communication technology (ICT) in lessons was limited in terms of both the level and the effectiveness of its usage.
- Timetable provision in both Mathematics and Applied Mathematics is very good.
- Students who require additional support in the area of numeracy are very well catered for.

MAIN RECOMMENDATIONS

- Active and collaborative learning methodologies should be more widely used in mathematics lessons.
- The role of ICT in lessons should be extended to include more widespread use of dynamic and interactive software.
- The Transition Year (TY) plan should be further enhanced to include agreed learning outcomes as well as resources and assessment modes for each topic.

INTRODUCTION

Castletroy College is a co-educational school under the auspices of Co. Limerick Vocational Education Committee (VEC) with a current enrolment of 1154 students. Programmes offered are the Junior Certificate, an optional Transition Year (TY), the Leaving Certificate Vocational Programme (LCVP) and the established Leaving Certificate.

TEACHING AND LEARNING

- The quality of teaching and learning observed ranged from good to very good, with some examples of exemplary practice noted. Teachers' preparation for lessons was of a very high standard. Additional resources were sourced in advance and were integrated seamlessly into lessons.
- Active learning methodologies and good collaborative exercises featured in a significant minority of lessons. There was, however, scope for their greater use in other lessons. In some instances, the use of resources developed by the Project Maths development team provided a focus for such exercises and facilitated very good discussion and interaction.
- A key feature of almost all lessons was the very effective use of higher order questioning strategies requiring students to think for themselves and to explore the concepts presented. Students showed good reasoning abilities in most instances, responding knowledgeably and articulately when questioned.
- ICT was used in the majority of lessons to present content and to provide a focus for teacher presentations. There is scope to extend the role of ICT as a teaching tool and to optimise its benefits through the more widespread use of dynamic and interactive software.
- Good differentiation strategies were a feature of most lessons. Exercises featured a range of cognitive challenge, enabling all students to achieve while being sufficiently demanding for the more able students.
- Students' literacy development was well supported through the widespread emphasis placed on keywords. This approach was of particular benefit to students who find the subject challenging. Students were particularly at ease in using topic-specific terminology in some lessons.
- Applied Mathematics students demonstrated exceptional depth of knowledge and were very well facilitated through brainstorming activities, effective collaborative exercises, challenging tasks and one-to-one assistance.
- In most lessons the learning intentions were shared with the students at the start of the lesson and their attainment was regularly monitored during the lesson. This good practice ensured that students had a clear focus for their learning and could assess their own levels of achievement effectively.
- The mathematics department has a common homework policy. An examination of student journals indicates that homework is assigned regularly. All lessons included the correction of homework and students' work was well presented in the copybooks reviewed.
- Mutual respect between all was evident in all lessons and teachers were supportive and affirming of students' efforts.

SUBJECT PROVISION AND WHOLE SCHOOL SUPPORT

- Timetable provision in both Mathematics and Applied Mathematics is very good. Time allocation to both subjects exemplifies best practice and provides students with ample opportunities to experience mathematical concepts regularly. The introduction of a TY module in Applied Mathematics has been sanctioned for next year with the aim of further enhancing students' exposure to the subject and increasing uptake at Leaving Certificate level. This is a very positive development and demonstrates the commitment of school management to maintaining the high profile that the subject already enjoys in the school.
- Mathematics is taught in mixed ability settings in first year allowing students the opportunity to develop their abilities before making decisions on what level to pursue. From second year onwards, students are assigned to higher and ordinary level bands within which students are taught in mixed ability settings. This is very good practice. Lessons are concurrently timetabled allowing students the flexibility to change level where necessary.
- The qualifications profile of the staff of the mathematics department is very good. Most of the mathematics teachers have specialist qualifications in Mathematics and all of the department's members have attended the workshops provided as part of the national roll out of Project Maths. School management actively encourages teachers to up-skill and it is of note that five members of the mathematics team are currently undertaking further study with support provided by Co. Limerick VEC.
- Students who find Mathematics challenging as well as those who are exceptionally able are very well catered for in the school and are identified using a wide variety of approaches. Provision for these students is supported by a dedicated team.
- An analysis of the school's achievements in the certificate examinations indicates that the uptake of Mathematics at higher level in the Junior Certificate and Leaving Certificate is very good. Levels of attainment in these examinations are also very high. There is a correspondingly high level of attainment evident in Applied Mathematics. Of particular note is the number of students who have been encouraged to take up Applied Mathematics at ordinary level over the past number of years. This high level of accessibility to the subject is commended.

PLANNING AND PREPARATION

- Meeting time for the teachers of Mathematics is provided as part of the whole-school planning process and formal meetings take place on a monthly basis with minutes of these meetings recorded. The department is ably co-ordinated and it is good practice that the position of co-ordinator rotates periodically. There is a very high level of co-operation and collaboration evident amongst the mathematics teachers.
- The subject plan is very well developed and contains comprehensive schemes of work for junior cycle and for fifth and sixth year with appropriate reference to syllabus learning outcomes. It was evident throughout the evaluation that this good level of planning work has had a very positive impact on students' learning experiences in the classroom.
- The TY plan contains a list of topics to be covered along with a suggested timeframe for each topic. Some suggested teaching approaches are also included in the plan. As a means of building on this, it is recommended that this plan be extended to include agreed

learning outcomes as well as resources and assessment modes for each topic in order to further facilitate the synchronisation of topics and to prevent gaps in student learning should they change level or in the event of a change in teaching personnel.

- The mathematics department engages well in a range of self-evaluation processes. These include an annual analysis of student performance in the certificate examinations. Strengths and areas for improvement have been well documented and action plans have been put in place where necessary.

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.

Published June 2013