An Roinn Oideachais agus Scileanna

Department of Education and Skills

Subject Inspection of Mathematics
REPORT

Tullamore College
Tullamore, County Offaly
Roll number: 72560U

Date of inspection: 21 September 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

Dates of inspection	**20th and 21st September 2011**
Inspection activities undertaken • Review of relevant documents • Discussion with principal and teachers • Interaction with students	• Observation of teaching and learning during six class periods • Examination of students' work • Feedback to principal and teachers

MAIN FINDINGS

- The quality of teaching and learning in all six lessons observed was very good.
- Learning was differentiated to meet students' learning needs.
- Student learning was monitored and assessed well in the lessons observed.
- There was a strong emphasis on supporting literacy.
- There is good whole-school provision for Mathematics.
- There is a high level of collaboration amongst members of the mathematics department, a very good subject plan has been developed and work on planning for the implementation of *Project Maths* is well advanced.

MAIN RECOMMENDATIONS

- The very good conceptual approach that was taken in exploring most of the ideas presented in the lessons observed should be extended to all mathematical concepts taught.
- The number of teachers with responsibility for teaching higher level Mathematics should be increased.
- A section on action planning should be included in the subject plan.

INTRODUCTION

Tullamore College is under the patronage of County Offaly Vocational Education Committee (VEC). It has a current enrolment of 339 boys and 189 girls. The school participates in Delivering Equality of Opportunity in Schools (DEIS), the Department of Education and Skills action plan for educational inclusion and offers the Junior Certificate, the Junior Certificate School Programme (JCSP), the established Leaving Certificate, the Leaving Certificate Vocational (LCVP) and the Leaving Certificate Applied (LCA) programmes. Transition year (TY) is optional for students.

TEACHING AND LEARNING

- The quality of teaching and learning in the six lessons observed was very good. In each lesson the learning objectives were shared with the students, prior learning was revised and the achievement of learning outcomes was checked. This contributed to the creation of very supportive learning environments where the students knew exactly what to expect and also provided the students with a sense of achievement on reaching the learning targets. In addition, approaches advocated by the JCSP were used to ensure that the focus of activities remained on ensuring that the students experienced success in Mathematics.
- Teachers used familiar situations, mnemonics and items of student interest to explain mathematical concepts. This enabled students to identify with the lesson material and made it easier for them to understand the work at hand.
- Very good differentiation of learning was evident throughout the evaluation. Teachers demonstrated an awareness of students' needs and differentiated questioning, learning tasks and the provision of support to address those needs.
- Teachers supported literacy through implementing the JCSP interventions for all class groups and through the use of key words and easy-to-read handouts.
- Strategies to encourage students to become independent learners were evident. The students participated and engaged very well. They also demonstrated a sense of confidence when asking and answering questions. Teachers encouraged students to explore the concepts taught by asking open questions and by taking care not to over support students in their work.
- Teaching focused on exploring the ideas presented in lessons in a conceptual way. There was scope in a small number of cases for a deeper treatment of some of the lesson material. This occurred, for example, where the reasons for steps in worked examples were not fully explained or discussed. It is, therefore, recommended that the very good conceptual approach that was taken in exploring most of the ideas presented in the lessons observed be extended to all mathematical concepts taught.
- Student learning was monitored and assessed well in the lessons observed. There was extensive evidence of Assessment for Learning (AfL) strategies being used such as, comment only marking, the provision of encouragement in the correction of written work and the provision of advice on how to improve. The use of laminate boards should be considered as an additional strategy. This approach would provide teachers with a quick and comprehensive assessment of student learning.

SUBJECT PROVISION AND WHOLE SCHOOL SUPPORT

- There is good time allocation for Mathematics and good timetable arrangements for level choice. Provision of concrete materials for teaching and learning is also good. Information and communications technology (ICT) provision is currently very limited. It is good, however, that there are plans to install ICT equipment in all mathematics classrooms in the coming weeks.
- Two separate level bands for all subjects are formed in first and second year. One band comprises three mixed-ability classes and the other band comprises two small class groups of students who were identified as having special educational needs. All students study Mathematics at a common level in first and second year and they are then divided into higher, ordinary and foundation level groups at the beginning of third year. By delaying decisions regarding levels until third year students are encouraged to study Mathematics at the highest level possible for as long as possible.
- Very good supports are provided for students with special educational needs.
- Higher level Mathematics is currently rotated between two experienced teachers. The number of teachers teaching the subject at this level should be increased in order to ensure that the expertise required to teach this level is retained within the school.
- Valuable opportunities are provided for students to participate in extra-curricular activities in Mathematics

PLANNING AND PREPARATION

- Planning time is provided for the members of the mathematics department to meet and plan for the subject. There is a high level of collaboration amongst members of the teaching team. It is evident from the review of the minutes of planning meetings that valuable discussion about effective teaching methodologies takes place. This good work should now focus on teachers sharing their experience of teaching LCA Mathematical Applications. This will require collaboration to generate ideas for the inclusion of practical activities and alternative methodologies in LCA.
- The work of the mathematics department is co-ordinated by an experienced teacher who has held this position for a number of years. In order to provide more members of the subject department with experience of co-ordinating the work of the subject department it is recommended that this position be rotated amongst the teaching team.
- A very good subject plan has been created and it comprises all of 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 this has had a positive effect on the quality of teaching and learning experienced by the students.
- To complement and support the very good planning practices already in place it is recommended that a section on action planning be included in the subject plan. The identification of actions necessary to facilitate the effective incorporation of ICT in mathematics lessons would be a good starting point. In addition, a formal process of evaluating the work of the subject department would be very beneficial and should be considered.

- The programme for TY Mathematics includes non-syllabus topics and is in keeping with the aims of TY.

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 was given an opportunity to comment in writing on the findings and recommendations of the report; a response was not received from the board.

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