

**An Roinn Oideachais agus Scileanna**  
**Department of Education and Skills**

**Subject Inspection in Mathematics**

**REPORT**

<b>Ainm na scoile / School name</b>	Abbey Vocational School
<b>Seoladh na scoile / School address</b>	The Glebe Donegal Town County Donegal
<b>Uimhir rolla / Roll number</b>	71180F

**Date of Inspection: 16-03-2017**



### **WHAT IS A SUBJECT INSPECTION?**

Subject Inspections report on the quality of work in individual curriculum areas within a school. They affirm good practice and make recommendations, where appropriate, to aid the further development of the subject in the school.

### **HOW TO READ THIS REPORT**

During this inspection, the inspector evaluated learning and teaching in Mathematics under the following headings:

1. Learning, teaching and assessment
2. Subject provision and whole-school support
3. Planning and preparation

Inspectors describe the quality of each of these areas using the Inspectorate's quality continuum which is shown on the final page of this report. The quality continuum provides examples of the language used by inspectors when evaluating and describing the quality of the school's provision in each area.

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.

## Subject Inspection

### INSPECTION ACTIVITIES DURING THIS INSPECTION

<b>Date(s) of inspection</b>	16-03-2017
<b>Inspection activities undertaken</b> <ul style="list-style-type: none"><li>• Review of relevant documents</li><li>• Discussion with principal and key staff</li><li>• Interaction with students</li></ul>	<ul style="list-style-type: none"><li>• Observation of teaching and learning during seven class periods</li><li>• Examination of students' work</li><li>• Feedback to principal and relevant staff</li></ul>

### SCHOOL CONTEXT

Abbey Vocational School operates under the trusteeship of the Donegal Education and Training Board (ETB). There are 409 boys and 432 girls enrolled currently. Transition Year (TY) is provided as an optional programme for students.

### SUMMARY OF MAIN FINDINGS AND RECOMMENDATIONS:

#### FINDINGS

- The quality of teaching and learning was very good overall; in a few lessons students were not enabled to be sufficiently independent in their learning and some were not appropriately challenged by the learning activities.
- In almost all lessons, a variety of teaching strategies facilitated students' learning very effectively but the approach used in the Leaving Certificate Applied (LCA) lesson observed was unsuitable for that class group.
- In almost all lessons, students engaged and participated very well and demonstrated very good learning.
- There is very good whole-school support for Mathematics and a range of initiatives is in place to promote the use of active methodologies.
- The members of the mathematics department work very well as a team and plan very effectively for teaching the subject.

#### RECOMMENDATIONS

- Further opportunities for students to be independent in their learning and to be sufficiently challenged as learners should be included in lessons.
- A more active approach should be taken to teaching LCA Mathematical Applications.

### DETAILED FINDINGS AND RECOMMENDATIONS

#### 1. TEACHING AND LEARNING

- The quality of teaching and learning was very good overall. The quality of teaching observed in individual lessons was either good or very good, with some excellent practice noted. In a few cases, while aspects of the lessons were very good, there was a need for students to be enabled to be more independent, more active or further challenged as learners.

- Very well-structured group and pair work was used in almost all lessons. This added variety to lessons and contributed to very high levels of student engagement and participation. The students were enabled to think about and discuss Mathematics with their peers and they enjoyed learning. Teachers provided very clear instructions and consolidated learning very well after collaborative activities.
- All lessons were very well planned and included a wide variety of resources to support learning. In some lessons, investigation and discovery approaches were used very well to enable students to gain a deeper understanding of the Mathematics involved and the use of such strategies should be extended. Problem solving is an approach that was not seen during the evaluation; it would have worked particularly well with the variety of methodologies used and should be included in future lesson planning.
- In some lessons, there was excellent practice in terms of teaching concepts in their full mathematical context. In one such lesson a task, which students worked on in pairs very effectively, linked quadratic graphs to their equations, factors and roots.
- In most lessons, high-quality tasks were prepared for students. In a lessons on functions, for example, questions that gradually increased in complexity facilitated students to learn independently. This approach should be further included in lessons and extended to providing additional challenge for more-able students.
- The quality of assessment was very good. Teachers monitored progress and provided assistance where necessary and, in most lessons, they were mindful not to over-support students. The skilful practice of providing teacher assistance at the most opportune points in learning should be extended to all lessons.
- In a significant minority of lessons, teachers employed some very effective strategies that allowed students to gain confidence in their own ability and to learn from their mistakes. For example, when students worked on past examination papers, the provision of the marking scheme enabled students to peer and self-assess their own work.
- Some effective learning was evident in the LCA lesson. However, an over-emphasis on paper-based activity was observed. A more active approach should be taken for teaching LCA Mathematical Applications.
- All teachers used questioning very well to monitor progress and to support students in developing their understanding. The students, in their contributions, demonstrated very good learning.
- The relationships between students and their teachers were observed to be very good.

## **2. SUBJECT PROVISION AND WHOLE SCHOOL SUPPORT**

- Mathematics is very well supported at whole-school level. Timetable allocation for Mathematics is very good. A wide range of resources including information and communication technology (ICT) facilities is provided for the subject.
- There is very good practice in relation to assigning students to levels for Mathematics. First-year and TY students study Mathematics in mixed-ability groups. They are assigned to higher and ordinary-level mathematics classes in all other year groups.
- The members of the subject department effectively monitor student achievement against national norms. It is good practice that this analysis informs planning for the subject.
- There is very good provision for students with special educational needs. A Level 2 Learning Programme for Mathematics has been designed and implemented to ensure that students'

needs are met. Team teaching has been introduced this year with considerable success and the teachers have received appropriate training.

- Valuable extra-curricular opportunities are provided for students to experience mathematics for fun and to develop their problem-solving and strategic thinking skills; examples include chess for first-year and TY students, and mathematics quizzes.

### **3. PLANNING AND PREPARATION**

- The quality of planning for Mathematics is very good. The members of the mathematics department work very well as a team. The subject co-ordinator ably maintains the subject planning documentation, communicates with the mathematics teachers and school management, and organises meetings of the group. However, it is not current practice to rotate this position. In the interest of building capacity and sharing the work, it is advised that the position of subject co-ordinator be rotated.
- In keeping with excellent practice, the school is planning a week where teachers will be facilitated to plan lessons collaboratively. This opportunity should be used to include planning for teaching concepts in their mathematical context, including discovery learning and problem solving, and providing additional challenge for more-able students.
- Programmes of work that effectively support learning have been developed for each year group and level. The programmes outline a wide range of student-centred methodologies and resources.
- The TY plan for Mathematics outlines the 'build-up programme' which was introduced just for the current year. The intention is that this pilot programme will be extended to all students as a revision resource to be used in their own time. As the 'build-up programme' focuses on the revision of syllabus material, it is good that it will be replaced by the school's original TY programme including material that will enable students to develop mathematical skills but does not focus unduly on the certificate examination syllabuses.

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.

# **Appendix**

School response to the report

**Submitted by the Board of Management**

**Part A: Observations on the content of the inspection report**

The Board of Management of the Abbey Vocational School welcomes the very positive report on Mathematics. The Board commends the teachers of Mathematics on the high standards implemented in planning, teaching, learning and assessment practices.

**Part B: Follow-up actions planned or undertaken since the completion of the inspection activity to implement the findings and recommendations of the inspection**

The Board will carefully examine the recommendations of the report to ensure their implementation.

## THE INSPECTORATE'S QUALITY CONTINUUM

Inspectors describe the quality of provision in the school using the Inspectorate's quality continuum which is shown below. The quality continuum provides examples of the language used by inspectors when evaluating and describing the quality the school's provision of each area.

Level	Description	Example of descriptive terms
<b>Very Good</b>	<b>Very good</b> applies where the quality of the areas evaluated is of a very high standard. The very few areas for improvement that exist do not significantly impact on the overall quality of provision. For some schools in this category the quality of what is evaluated is <b>outstanding</b> and provides an example for other schools of exceptionally high standards of provision.	Very good; of a very high quality; very effective practice; highly commendable; very successful; few areas for improvement; notable; of a very high standard. Excellent; outstanding; exceptionally high standard, with very significant strengths; exemplary
<b>Good</b>	<b>Good</b> applies where the strengths in the areas evaluated clearly outweigh the areas in need of improvement. The areas requiring improvement impact on the quality of pupils' learning. The school needs to build on its strengths and take action to address the areas identified as requiring improvement in order to achieve a <i>very good</i> standard.	Good; good quality; valuable; effective practice; competent; useful; commendable; good standard; some areas for improvement
<b>Satisfactory</b>	<b>Satisfactory</b> applies where the quality of provision is adequate. The strengths in what is being evaluated just outweigh the shortcomings. While the shortcomings do not have a significant negative impact they constrain the quality of the learning experiences and should be addressed in order to achieve a better standard.	Satisfactory; adequate; appropriate provision although some possibilities for improvement exist; acceptable level of quality; improvement needed in some areas
<b>Fair</b>	<b>Fair</b> applies where, although there are some strengths in the areas evaluated, deficiencies or shortcomings that outweigh those strengths also exist. The school will have to address certain deficiencies without delay in order to ensure that provision is satisfactory or better.	Fair; evident weaknesses that are impacting on pupils' learning; less than satisfactory; experiencing difficulty; must improve in specified areas; action required to improve
<b>Weak</b>	<b>Weak</b> applies where there are serious deficiencies in the areas evaluated. Immediate and coordinated whole-school action is required to address the areas of concern. In some cases, the intervention of other agencies may be required to support improvements.	Weak; unsatisfactory; insufficient; ineffective; poor; requiring significant change, development or improvement; experiencing significant difficulties;