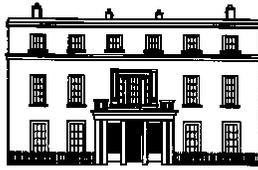


An Roinn Oideachais agus Scileanna
Department of Education and Skills

Subject Inspection of Mathematics
REPORT
Bunclody Vocational College
Bunclody, County Wexford
Roll number: 71620H

Date of inspection: 17 January 2013



A N R O I N N | D E P A R T M E N T O F
O I D E A C H A I S | E D U C A T I O N
A G U S S C I L E A N N A | A N D S K I L L S

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

INFORMATION ON THE INSPECTION

Date of inspection	17 January 2013
Inspection activities undertaken <ul style="list-style-type: none">• Review of relevant documents• Discussion with principal and teachers• Interaction with students	<ul style="list-style-type: none">• Observation of teaching and learning during four class periods• Examination of students' work• Feedback to principal and teachers

MAIN FINDINGS

- The quality of teaching and learning observed was good, with some instances of very good practice.
- Management is very supportive of Mathematics and its development.
- The mathematics department presented as a collaborative, supportive and reflective team of teachers willing to embrace change and development.
- There is evidence that many of the mathematics department policies are realised in classroom practice.
- Reflective subject department practices and procedures are resulting in initiatives that should over time improve students' attainment in Mathematics.

MAIN RECOMMENDATIONS

- There is scope for greater use of challenging questioning strategies that would encourage better learning for understanding among all students.
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INTRODUCTION

Bunclody Vocational College is a co-educational post-primary school comprising 151 post-primary and 92 Post-Leaving Certificate students. The school offers the Junior Certificate School Programme (JCSP), Leaving Certificate Vocational Programme (LCVP) and the Leaving Certificate (LC) to its post-primary cohort. The school does not offer the Transition Year (TY) programme. The focus of this report is on the post-primary sector of the school.

TEACHING AND LEARNING

- Four single lessons were observed during the one-day evaluation. The quality of teaching observed was good, with some instances of very good practice. Effective team teaching was observed in one lesson. Teachers were very positive about Mathematics and demonstrated their commitment to embracing recommendations and areas for further improvement.
- Classroom management was uniformly very good. Students presented as being attentive and respectful and all lessons were conducted in a positive atmosphere. Teachers frequently circulated the classroom and provided individual assistance to students where appropriate. This is very good practice.
- Preparation for lessons was very good with effective use made of supplementary materials which were introduced at key junctures of the lesson. Commendably, teachers frequently referenced areas of the syllabus demonstrating that Mathematics is a series of connections rather than topics learnt in isolation.
- In all instances, teachers shared the learning objectives with the students and in some lessons recorded them on the whiteboard. This is very good practice. Lesson topics were set in a real-life context allowing students to develop a better understanding of the mathematical concept.
- In most instances, teachers recorded keywords on the whiteboard during the lesson and frequently asked students to provide their definition for the word. This very good practice supports the literacy policy of the mathematics department.
- In many lessons, a range of effective methodologies were observed such as those approaches encountered during Project Maths in-service. Successful group activity was observed where students discussed and arrived at the solution to a problem posed. Following this activity students were required to explain the technique used to complete the problem. In some lessons, a problem-solving approach was effectively used enabling students to deepen their understanding of the topic. Such practices are very good and encourage students to become active in their own learning.
- Questioning strategies were mostly very effective. There were some very good examples of higher-order questions in lessons. For example, some teachers frequently asked “why?” or “what would you do?” The use of such probing questioning strategies allowed students to be fully engaged with their learning while also allowing the teacher to make judgements about the readiness of students to progress with the topic. Continued use of higher-order questioning strategies is recommended to further enhance students’ active engagement in their learning.
- The level of student learning was good. Some instances of very good understanding of mathematical concepts were noted. Students were confident and used subject-specific mathematical terminology. In some instances students drew on prior learning and

different areas of the syllabus to answer questions. In one instance, a very good approach focusing on the method used to solve a mathematics problem was noted. Students were required to explain the method they chose and the rationale for their choice. Such reflective learning practices are very productive.

- In all lessons, information and communication technology was effectively used as a learning tool and significantly enhanced the learning experience of students. 'Geogebra' was effectively used to visually represent the slope of a line during a coordinate geometry lesson. In another lesson, the data projector was used to demonstrate the height of the school's art room during a trigonometry lesson. The use of such technology proved very successful and significantly enhanced the learning of students.
- Teachers are mostly classroom based. In most instances a wide range of subject-specific materials including students' work, samples of mathematical symbols and definitions were displayed. In some lessons reference was made to these materials as an aid to the topic currently being taught. This is very good practice.

SUBJECT PROVISION AND WHOLE SCHOOL SUPPORT

- Whole-school support for Mathematics is very good, demonstrating management's commitment to subject development.
- Two mixed-ability class groupings are arranged in first year. Following a recent review of students' performance in state examinations, banding of Mathematics classes now takes place from second year. Such reflective practice is exemplary and should over time support the mathematics department's priority to improve academic attainment in Mathematics.
- The mathematics department comprises four teachers. Teachers are qualified to teach Mathematics at varying levels. Management is mindful and is planning to ensure that there is sufficient capacity within the department to support the curriculum. To this end the opportunity to avail of upskilling courses should be considered.
- Management is very supportive of the mathematics department, facilitating attendance at continuing professional development and granting requests for subject-specific resources.
- A mathematics lunchtime club activity was observed and students benefited from and enjoyed the challenges offered to them during this activity. Involving students in competitions arranged through the Irish Mathematics Teachers Association and through events organised during Maths week should be considered. Furthermore the use of school display areas should also be considered as a means to promote Mathematics in the school.

PLANNING AND PREPARATION

- Structures to support subject department planning are very good. The position of coordinator of Mathematics is rotated among members of the department, regular meetings take place, minutes of meetings are retained and a subject department plan has been developed. A member of the learning support department is also a mathematics teacher and this is proving to be an invaluable link and support to the mathematics department.
- An informative subject plan provides information regarding subject department policies and organisational details of the department. Schemes of work have been devised and

provide a valuable framework for the delivery of Mathematics throughout the school. In line with best practice the schemes of work reference the appropriate Teaching and Learning Plans and strands of Project Maths. To further enhance this very good work, a review of the schemes is encouraged to identify where the sequencing of topics could be better attained.

- Collaborative practices of the department have resulted in the identification of key development priorities for Mathematics. To further progress these priorities, action plans should be devised to allow for the full realisation of the all priorities in a timely manner.
- Individual planning for lessons was very good and in many instances teachers have developed and customised the department's schemes to support their in-class teaching and learning.

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

Published June 2013.

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 of Bunclody Vocational College values this external evaluation of the quality of Teaching and Learning in Mathematics in our school. We welcome the recommendation of this report given that it duly recognises the many strengths of our Maths Department and the examples of very good practice observed.

These include:

- The quality of class preparation, the quality of teaching, and the level of learning and the confidence on students in using mathematical terminology.
- The range of effective teaching methodologies including the sharing of learning objectives, the effective use of group activities and the effective use of a problem solving approach to enable students deepen their understanding on Mathematical topics.
- The uniformity of very good classroom management.
- The effective use of team teaching.
- The positive attitude of the teachers and their commitment to embracing recommendations and areas for further improvement.
- The effective use of information and communication technology to support learning.

The Board also wishes to commend the dedication and hard work of our Maths teachers. We thank them sincerely for their continuous dedication and hard work. We are also committed to providing additional resources as deemed appropriate in order to maintain and improve the high standard of delivery of this and all other subject areas in our school.

Area 2: Follow-up actions planned or undertaken since the completion of the inspection activity to implement the findings and recommendations of the inspection

All teachers continue to be supported and encouraged by school management to avail of, and participate in, continuous professional development. The Board is committed to providing a future workshop around the theme of effective questioning strategies as recommended by this report with a view to further enhancing all students learning.

Since this subject inspection the school has participated in the IMTA First Year Maths competition. One student qualified for the regional finals in this event. We have also established our Link Teacher for Numeracy. This teacher has attended a number of in-service events. The numeracy committee are currently gathering evidence with a view to developing our Numeracy Plan. JCSP students have also engaged in a national Maths/Art cross curricular project. Our book for the Make a Book Competition also focussed on Numeracy across the curriculum.