

An Roinn Oideachais agus Scileanna

Department of Education and Skills

**Subject Inspection of Metalwork and Engineering
DRAFT**

Ringsend Technical Institute

Ringsend, Dublin 2

Roll number: 70200D

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**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 METALWORK AND
ENGINEERING**

SUBJECT INSPECTION REPORT

This report has been written following a subject inspection in Ringsend Technical Institute. It presents the findings of an evaluation of the quality of teaching and learning in Metalwork and Engineering and makes recommendations for the further development of the teaching of these subjects in the school. The evaluation was conducted over one day, during which the inspector visited classrooms and observed teaching and learning. The inspector interacted with students and the teacher, examined students' work, and had discussions with the teacher. The inspector reviewed school planning documentation and the teacher's written preparation. Following the evaluation visit, the inspector provided oral feedback on the outcomes of the evaluation to the principal. 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.

SUBJECT PROVISION AND WHOLE SCHOOL SUPPORT

Metalwork and Engineering are offered as optional subjects at junior and senior cycle respectively in Ringsend Technical Institute. The proportion of students choosing these subjects is good and a particularly high percentage of girls choose Metalwork at junior cycle. This is a most welcome trend.

The allocation of four class periods to Metalwork at junior cycle is appropriate. In order to further develop the subject at senior cycle an additional class period per week should be allocated to Engineering. In doing so, this would bring the allocation to five periods per week, in line with common practice.

There is one specialist room provided for the delivery of Metalwork and Engineering. This room is well resourced with modern machinery and equipment. There is a need, however, to carry out a full risk assessment of this room in order to ensure that it is fully compliant with the recommendations made in the Department of Education and Skills/State Claims Agency's joint publication "*Review of Occupational Health and Safety in the Technologies in Post-primary Schools*". Particular attention should be given to ensure that: safe operational areas are demarcated around machines, all machines are suitable for a school environment, appropriate health and safety signage is displayed and sufficient personal protective equipment is available and used at all times.

All students in first year are given the opportunity to sample all optional subjects until the October mid-term break. This is a very worthwhile initiative as it helps students to identify subjects that they enjoy and to choose subjects based on their interests and aptitudes.

The subject department has attended a number of continuing professional development (CPD) courses. These courses vary from subject-specific skill development to information and communication technology (ICT) courses aimed at integrating ICT into teaching and learning situations. The subject department's commitment to professional development is commended.

PLANNING AND PREPARATION

Some elements of good quality subject planning have been developed by the subject department; however this is an area that requires considerable attention. The subject department should now prioritise the development of a coherent subject plan that formalises the delivery of the subjects in the school. Particular attention should be paid to the development of policies and practices pertaining to: subject-specific supports for students with additional educational needs, the identification and implementation of strategies appropriate to the Junior Certificate School Programme (JCSP) such as literacy and numeracy initiatives; and strategic plans to improve student uptake of higher level.

Good quality curricular plans were presented during the evaluation. These plans are well developed and provide the subject department with a good structure for the delivery of the syllabuses particularly at ordinary level. It is essential that these plans be developed to provide all students with the opportunity to experience higher-level subject matter and project work. It is therefore recommended that the subject department reviews the existing curricular plans with a view to introducing higher-level subject matter from first year and, in doing so, raising teacher, student and parental expectations. This could lead to an increase in the uptake of higher level at junior cycle and eventually at senior cycle.

A large number of very good quality resources have been accumulated over a considerable period of time. These resources supplement curricular plans and are introduced to theoretical lessons to support the use of the textbook.

The level of planning for all of the lessons observed was very good, resulting in well prepared lessons and efficiently executed demonstrations and instruction activities. A number of good quality resources were prepared in advance of theoretical lessons and materials and consumables were prepared for all practical lessons.

TEACHING AND LEARNING

All lessons observed were well structured and appropriate transitions occurred between the various constituent elements. In most lessons, theoretical and practical elements were taught in isolation. The subject department should consider the integration of these two strands of the syllabuses in order to encourage further student participation and engagement with the subject matter. This approach could also help students to gain a more in-depth understanding of theoretical content when taught in a more practical setting.

Teacher demonstration was the primary methodology utilised to facilitate students' learning. In one instance, this technique was used very effectively to help students to gain a full understanding of the importance of the included angle on a taper-turning exercise. A large teaching aid was prepared in advance for this purpose and allowing students to vary the settings on the model

thereby enabling them to identify the correct setting for the lathe's top-slide. This approach was most successful.

In practical lessons, students received very good levels of individual and group assistance, advice and guidance. The relatively small number of students in each class group facilitated this high level of teacher-student interaction. To further develop students' understanding of materials and processes, every opportunity should be seized to question students during these interactions, thereby promoting discussion and dialogue and the consolidation of theoretical knowledge through the use of project work.

Project work assigned to students varied considerably. Best practice was observed in a first-year class where a decorative metalwork project provided students with an interesting activity with an attainable outcome. This project promoted students' attention to detail and their appreciation for the aesthetic value of project work. It also provided students with a great opportunity to link Metalwork with a wide variety of additional subject areas in a cross-curricular thematic manner. In contrast to this, some practical project work undertaken did little to inspire students or to develop a life-long appreciation for the subject. The subject department should consider reviewing all project work with a view to ensuring that a blend of traditional and contemporary projects are included in the curricular plans to achieve the desired learning outcomes of the relevant syllabuses.

Classroom management was excellent in all lessons observed. A variety of practices and procedures have been developed over time, enabling lessons to be organised and managed effectively. Students were regularly affirmed and a positive and supportive learning atmosphere was evident.

Student participation in lessons was very good and this was encouraged throughout the lessons observed. Students were industrious throughout the evaluation and were keen to produce good quality work. This was particularly evident during a senior cycle lesson where students' written work showed considerable levels of recall and understanding of key concepts. Students' practical skills were appropriate and some students demonstrated a good level of independence in their approach to learning.

In recent years, all students have chosen ordinary level at junior and senior cycle. Achievement at this level is good with some students excelling particularly at junior cycle. To address this imbalance in relation to student uptake of higher level, the subject department should ensure that all students experience elements of the higher-level course particularly in the early stages of the junior cycle. This should be carefully planned and delivered in a structured format identifying all possible supports for students in need of additional educational supports.

ASSESSMENT

Students are formally assessed twice per year, with an additional formal assessment for examination-year groups. Metalwork and engineering assessments usually consist of a combination of practical and theoretical elements as is best practice. This mode of assessment provides students with the opportunity to gain recognition for all aspects of the syllabuses in line with the modes of assessment used in certificate examinations.

Students are given homework exercises regularly. These assignments are monitored by the teacher, enabling good levels of feedback to be administered to students helping them to identify

areas where improvements could be made. Students' class work is also monitored and it was evident from the evaluation that students maintain their work to a high standard. This is commended. Students' project work is corrected upon completion and students receive good levels of feedback. It is evident from the quality of students' practical skills and abilities that they benefit significantly from this approach.

Good records of students' results are compiled and these records were made available to the inspector during the evaluation. These records provide the subject department with useable data to accurately gauge the quality of student outcomes. This data should enable the subject department to identify students who are capable of attempting higher level and may also indicate areas of the syllabuses that require additional revision or a change in teaching and learning methodologies.

SUMMARY OF MAIN FINDINGS AND RECOMMENDATIONS

The following are the main strengths identified in the evaluation:

- Uptake of Metalwork and Engineering among both boys and girls in Ringsend Technical Institute is good.
- The subject department has accumulated a significant quantity of good quality teaching aids and resources and uses these resources in lessons to facilitate students' learning.
- A positive, supportive and affirmative learning atmosphere was evident in the metalwork and engineering lessons observed.
- Students' achievement at their chosen level is good.
- Good systems have been developed to record students' results, homework and completed project work.
- Students' written work was well maintained and presented.

As a means of building on these strengths and to address areas for development, the following key recommendations are made:

- Senior management should allocate an additional class period to senior cycle Engineering.
- The metalwork and engineering room should undergo a full risk assessment and a plan should be put in place to address any risks identified.
- The subject department should now prioritise the development of a coherent subject plan that formalises the delivery of the subjects in the school.
- The current curricular plans should be developed to ensure that all students are introduced to higher-level material at the beginning of their programme thereby raising teacher, student and parental expectations.

A post-evaluation meeting was held with the principal at the conclusion of the evaluation when the draft findings and recommendations of the evaluation were presented and discussed.

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