



St Joseph's Secondary School

Castlebar

Co. Mayo

School Self Evaluation Report – Numeracy

School Roll Number: 64590K

Evaluation Period 2014-2015

Report Issued April 2016

## **School Self Evaluation**

### **1. Introduction**

#### **1.1 Focus of Evaluation**

A school self-evaluation of teaching and learning in St. Joseph's Secondary School was undertaken during the period September 2014-June 2015. During the evaluation, Maths and how the teaching and learning in all other subjects support the acquisition of numeracy skills was examined. The focus of the evaluation was on the 1<sup>st</sup> year cohort.

**This is a report on the findings of the evaluation**

#### **1.2 School Context**

St Joseph's Secondary School is an all-girls post primary school based in Castlebar, Co. Mayo. It is a Catholic voluntary secondary school and operates under the trusteeship of CEIST. There are two other schools in Castlebar, an all-boys school and an ETB co-educational school. In the academic year 2014/15 the student population was 420 students. The school offers the established Junior Certificate and Leaving Certificate and the Leaving Certificate Vocational Programme. In addition the school offers an optional Transition Year programme for students on completion of the Junior Cycle. On average 85% of the Leaving Certificate student's progress to third level with a high percentage taking level 8 courses in the Universities and teacher training colleges. There are high expectations from teachers, parents and students in relation to student achievement. Student and teachers work well together in an atmosphere of respect and trust. The Board of Management are supportive of all school initiatives that enhance and develop the learning experience of students and in relation to numeracy are aware of its value as a necessary lifelong skill.

### **2. The Findings**

**Evidence relating to student learner outcomes, student learning experiences and attitudes and teachers practices were gathered from a range of sources.**

## **Learner Outcomes**

### **CAT3 results**

Since 2014 First year students take the Cognitive Abilities Test in June of the year of enrolment. Prior to that students took the aptitude test in September of enrolment. The CAT3/4 is a Cognitive Abilities Test used to test the reasoning abilities of students from 7 to 17 years of age. The school since 2015 uses the CAT4 which is an Irish Edition and which has been fully standardised for Ireland from ages 10:06 to 17 +. The test measures the four principle areas of reasoning- verbal, non-verbal, quantitative and spatial. For the purposes of the evaluation the school looked at the test results of the first years of 2014/15 (CAT3). With respect to the Quantitative results, the mean standard age score of 104.9 for the group of students was significantly above the national average. 29% of students had a standard score of 104-111 and 13% of 112- 118. The spread of scores was not significantly different than the national spread of scores.

### **Common Maths Test**

A common test was designed by the Maths Department and was administered to all first year students at the end of September 2014. The results helped identify a base level of student's mathematical competencies and helped identify areas for improvement in basic mathematical skills. In September 2015 teachers used a PDST designed competency test which allows for further detailed analysis of student competencies and which helps identify areas where there may be deficits in student knowledge and skills.

### **Analysis of Leaving Certificate Results**

An analysis of the Leaving Certificate results is done annually. An analysis of the results over the previous 5 years was undertaken for the purposes of the evaluation. Students take on average 7 papers with 75% of papers taken at Higher Level. The average CAO points achieved per student was found to be 400 points which is above the national average of 350. The percentage of students achieving above 500 points was 20%. The national average in 2015 was 9.9%. Overall students 82% of students achieved above 300 CAO points

## **An analysis of the Junior and Leaving Certificate Mathematics Examinations results**

### **Junior Cycle**

Uptake by students of the Higher Level Mathematics paper has averaged at 59.4% of the student cohort from 2010 to 2014. In 2010 it was (55%), 2011(66%), 2012(67%), 2013 (49%), and 2014(60%).

At Ordinary level the average over the 5 year period was 36.8%. In 2010 it was (38%), 2011(30%), 2012(33%), 2013(43%) and 2014(40%).

At Foundation level the average over the five year period was 3.8%. In 2010 it was (7%), 2011(4%), 2012(0%), 2013(8%) and 2014(0%). In 2014 the national uptake of the Higher level paper was 54% and in St Joseph's it was 60%, at Ordinary level national uptake 40% and in St. Joseph's 40% while the foundation level in St. Joseph's was 0% and nationally 6%.

### **Leaving Certificate**

Uptake by students of Higher Level maths for the Leaving Certificate averaged at 18.8% over the five year period from 2010-2014. At ordinary level it averaged at 76.7% and at 4.5% for foundation level. At national level in 2014 the uptake at higher level 27% and the school cohort 32%. For ordinary level it was 62% nationally and 63% for the school cohort. At foundation level 5% took the Foundation level compared with 11% nationally. Comparing the % of students that took Higher Level for the Junior Certificate in 2010 and Higher Level for the Leaving Certificate in 2013 this was 55% and 20.9% representing less than half the students continuing to Higher Level for the Leaving Certificate. In 2011 and 2014 this was 60% and 31% representing a small increase.

### **Learner Experiences**

#### **Student attitudinal survey**

In April 2015 a group of first year students (51) took part in a Numeracy attitudinal survey. The survey used was one designed by PDST. Overall students had a positive attitude to maths with 84% of students agreeing with the statement that they liked maths.

66% reported that their teachers had a positive attitude to maths.

A surprisingly high 43% disagreed with the statement that their maths skills and procedures are used in all their other subjects.

A very high 91% either agreed strongly or agreed that they could improve on their numeracy skills.

88% agreed or strongly agreed with the statement that they saw the relevance of maths to their everyday lives.

88% expressed an interest in finding solutions to problem but 20 % disagreed with the statement that they are encouraged by their teachers to develop their own problem solving strategies rather than relying on the teacher for the answer.

### **Co- Curricular and Extra-Curricular**

Students engage in a wide variety of cross and extra-curricular activities that promote numeracy from sport and music and to art and design and crafts. Students have competed in the Maths Olympiad, AILO, web design, the BT Young Science Competition, the local IMTA branch Maths Competition, the Mathletes challenge, Build a Bank competitions, the BSTAI Inter schools quiz and many other such activities that provide rich learning experiences for students.

### **Teachers Practice**

#### **Discussions at staff Level**

A discussion on numeracy across the curriculum took place during staff meetings in 2014/15. Teacher attitudes to numeracy and mathematics in general were found to be very positive. There was a willingness and openness to embrace the promotion of numeracy across the curriculum. Teachers were asked to ensure that any bias that they may have towards maths was not to be conveyed to students in the classroom and to highlight 'maths moments' where and when possible in class.

Following a discussion, it was decided that a common approach be used in regard to (i) mathematical competencies in the areas of converting fractions/decimals to percentages and (ii) using a common approach to the presentation of line graphs and teachers were encouraged to use the SALT approach with their students. Teachers were encouraged, when returning test results to students to give the raw score only and ask students to estimate and then convert their score to a percentage. It was also agreed to have a staff in-service on numeracy for August 2015 before the start of the school year.

### **Subject Inspection of Mathematics**

In February 2014 there was a DES Subject Inspection of Mathematics. The report made reference to a learning environment that celebrated Mathematics and which contributed 'strongly to the positive profile that the subject has in the school'. It also commented on the student's display of work in classrooms. The school was complimented on the timetable provision for mathematics.

### **In-service and CPD**

The teachers of mathematics in the school all have qualifications in mathematics and satisfy the teaching council requirements for the teaching of mathematics. All teachers of mathematics have attended the Project maths training and continue to be involved in professional development courses. The mathematics department have availed of school based in-service for a full day in May 2015. Many of the teachers of mathematics also teach another subject which has further enhanced the promotion of numeracy across the curriculum. The numeracy team co-ordinator and the deputy principal attended numeracy strategy in-service organised by PDST and reported back to staff at staff meetings.

### **Subject Planning**

Subject planning is well developed in the school with all subject departments having subject plans in place. Formal subject planning meetings take place at the beginning of the school year and also at the end of year. Throughout the year informal meetings take place between teachers. The subject plans reflect current guidelines as recommended by the PDST and many departments are now moving to creating a shared digital version of the subject plans. From 2014/15 numeracy was highlighted as an area for review and teachers were asked in their subject plans to explicitly make reference where numeracy skills and knowledge are relevant. Teachers were directed to the suggested PDST subject plan templates. Teachers analyse the state examination results annually and keep records in their subject planning folder.

### **Observations**

Some observations noted by teachers, particularly teachers of Mathematics included the lack of knowledge and skill many students have with multiplication and division facts and their over reliance on calculators to carry out simple multiplication and division tasks. There was also found to be discrepancies with some student's Primary STen scores for Mathematics and the CAT3 quantitative scores.

Teachers also reported that they found differences in student's mathematical competencies and knowledge among the primary schools they came from.

### **3. Progress made on previously identified improvement targets**

Not applicable for year one as School Improvement Plan not in place

### **4. Summary of School self-evaluation findings**

#### **4.1 Our school has strengths in the following areas:**

- 84% Of students report that they like maths
- Uptake at Higher Level is above the national average
- There is a numeracy rich environment in the school
- Student achievement at Leaving Certificate is above the national average
- The aptitude of the first year student cohort of 2015 is above the national norm based on the results of the CAT3
- Teachers have a positive attitude to maths and are supportive in the promotion of numeracy and being numerate as a life skill.
- The Principal, Deputy Principal, teachers and Board of Management collaborate to bring about school improvement through the implementation of the numeracy strategy.
- There is a dedicated core team of teachers who worked together on the school numeracy team, in gathering data and in writing the Report.
- Students are affirmed and awarded for their achievements.

#### **4.2 The following areas are prioritised for improvement:**

- Developing a common approach to mathematical operations (converting fractions/percentages/decimals) and presentation of graphs.
- Highlighting the language of numeracy in the classroom across the curriculum.
- Raising awareness of numeracy and that being numerate is a skill for life

- Creating a numeracy rich environment in the school.
- Focusing on the development of key mathematical competencies.
- Increasing the uptake of Higher Level maths at junior and senior cycle.
- Provide a school based in service on numeracy across the curriculum.

**4.3 The following legislative and regulatory requirements need to be addressed:**

- Data Protection Policy
- Vetting Policy