

Student Reflection

September 2015-May 2016



John the Baptist Community School, Hospital, Co. Limerick.

"We do not learn from experience — we learn from reflecting on experience".

- Dewey

Section 1

1.1 Context of the School

John the Baptist Community School (JTBCS) is in existence since 1997 with the amalgamation of Presentation De La Salle and the Vocational School. JTBCS is a coeducational school with 970 students. A Board of management which is representative of all the school partners governs the school.

JTBCS is committed to the provision of a broadly based education in an atmosphere of mutual trust and respect, balancing vision with realism, which facilitates personal growth and development among students, staff and community within the context of a Christian ethos.

The school is recognised as a centre of academic excellence and develops the talents of each student in a calm and caring environment. The school recognises that an ordered atmosphere is essential for both academic and social education to take place effectively.

JTBCS is held in high esteem by the community and this is due to the professionalism and enthusiasm of the staff. One of the main strengths of our school is the teamwork and cooperation which permeates all our activities. We aspire to continue developing our school in a collaborative manner, sharing the vision of the future to which learning is at the core. With students at the core of this vision, JTBCS is endeavouring to improve reflection by both teacher and students with the aim to enabling greater engagement and deeper thinking by students during the learning process. This is further enhanced by and building upon our emphasis on the implementation of effective questioning strategies from LSP6 last year.

It is due to the commitment to this vision that JTBCS as a school decided to participate in the Learning Schools Project 7 (LSP7). A learning school is defined as a community of practice which respects and values learning by all and where the culture is one of continuing reflection and inquiry, commitment to the process of review and self-evaluation and participation in on-going development. There is an obvious learning culture in JTBCS. This is evident through teachers' on-going professional development in courses in recognition that "it is the teachers in their classrooms who make the major difference to student achievement." (Mike Hughes, Closing the Learning Gap, 2001).

1.2 Rationale

We in JTBCS are actively engaged in the process of reflective practice towards continually developing our pedagogical practices and the learning outcomes of our students. Since 2012 we as a school community have been actively involved in a process of school self-evaluation and participated in LSP4, LSP5 and LSP6 which encompass both literacy, numeracy and effective questioning. Building on the strong tradition of professional development in our school in September 2015 we embraced LSP7. LSP7 has allowed us as a school to actively engage in the school self-evaluation process with a particular focus on the area of reflection.

LSP7 is an action research project the aim of which is to promote the ongoing development of a learning community within the school, and to enhance the capacity of individual teachers in leading learning. Peter Senge referred to this concept of a learning organisations where people continually expand their capacity to create the results they truly desire, where new and expansive patterns of thinking are nurtured, where collective aspiration is set free, and where people are continually learning how to learn together.' (cpsedtech.com). The project came about as the result of an enthusiasm and commitment to improve the inclusion and engagement of all of our students in their learning. Ultimately the aim of the research was to encourage deeper reflection, and as a result deeper thinking, in our students and to equip them with an awareness of the importance and benefit of reflection on their thinking and learning and with a collection of reflection strategies which will last long after leaving JTBCS.

Aim:

The aim of our project was to evaluate the efficacy of reflection strategies in our school and to improve the use of student reflection to advance student thinking and learning in our school. Last year in LSP6 we focused on the implementation of effective questioning strategies and we returned to the very cornerstone of teaching and learning and to the origin of the word educate; from the Latin educere which means to 'lead out'. We felt that placing a focus on student reflection this year as part

of LSP7 would further develop their ability to 'lead out' their depth of thought through the implementation of reflection strategies in class.

The reason we decided to focus on reflection is that we believe reflection on thinking and learning can transform experience into genuine learning opportunities based on meaning making and facilitate the development of understanding. Reflective learning is the process of examining and exploring an issue of concern, caused by a learning experience, that creates and clarifies meaning for the leaner and which results in a changed understanding. We believe that by reflecting on their learning, and making it explicit in the learning and teaching that happens in the classrooms at JTBCS, that students will gain a greater understanding of what they know/understand, what they do not know/understand, what they need to learn in order to connect the parts of what they've learned and how they can progress to further deepening that understanding.

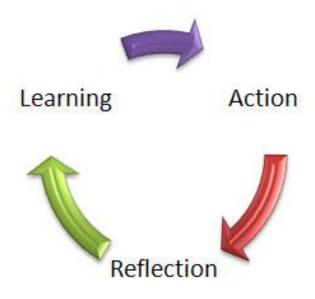
Reflection by its nature challenges students to connect ideas and activities and to develop higher-level thinking and problem solving, especially when reinforced with effective questioning strategies. Reflection also increases the likelihood that students will remain engaged with the learning process in the classroom. Often students expect to be told what to learn and when to learn it without thinking about what they themselves need to learn in order to understand a topic fully. Reflection provides them with such opportunities and empowers them to take ownership of their own active role as learner.

The aim of this research project was to encourage students to reflect in and on their learning and to consider the following questions:

- What I know/ understand?
- What I do not know/ understand?
- What I need to learn in order to connect all parts of what I have learned?
- How would I do it differently next time?
- How could I progress?
- As a result it aims to promote deeper thinking and learning.

Through reflection 'in' and 'on' their learning students become more aware of the knowledge and skills that they have developed. They are then better able to identify their own strengths and areas for development and devise action plans to facilitate future learning. Through reflection they gain greater understanding of themselves and how they personally learn and take on more responsibility for their own learning progress. Being able to reflect on one's learning and learning how to become a better learner are key elements of the junior cycle key skills. It is hoped that students would analyse how they learn and what they have learned, make judgments on their own performance and become more constructively critical through rigorous questioning and deep probing into what and how they learn. The overarching aim was to promote higher level thinking and understanding. As part of the reflective process the students would also be encouraged to develop the core skills of information processing, critical and creative thinking, communication, working with others and being personally effective.

Donald Schön, author of The Reflective Practitioner, was an influential thinker in developing the theory and practice of reflective learning. He suggested that the reflective learner reflected both when they were doing the learning (in the action) and after the learning (on the action). This enables students to realise that they can learn to think on their feet to resolve a challenge that arises, as well as on the learning experiences that have occurred and how they can progress.



As a project team we decided to implement 5 key reflection strategies; the reflection arrow, 3-2-1 strategy in conjunction with white boards, Tweet poster, weekly Reflection template and explicit learning intentions referred to throughout the lesson. There were three guiding questions or principles underpinning our decision regarding what strategies we would implement. These were: is the strategy effective? Is it efficient? And does it have value? We wanted to ensure that the reflection strategy was effective in the classroom and worked well as a pedagogical method for the teacher and as a learning tool for the student. We wanted to ensure that the strategies were efficient to use, were adaptable to varying topics with a range of subject disciplines, didn't necessitate a long duration for planning the activity and were easily accessible. And we wanted to ensure that they held true educational value; that they enriched the thinking and learning processes in our students and in our classroom.

Underlying the implementation of all three strategies was an intentional consideration of wait time (think-time, talk-time, write-time) to allow time for deeper thinking and reflection. For us at JTBCS the aim we chose enabled us to ensure that we maintain our vision of being a learning school with the view to continuing to develop the community of practice at JTBCS. Due to this on-going reflection and development teachers have enhanced their capacity to contribute to the learning school.

Objectives:

The objectives we set to enable us to achieve our aim were as follows:

1. Teachers:

- To raise awareness of reflection amongst the teachers here in JTBCS. To encourage them to think about the provision of opportunities for reflection in their own classrooms and in the learning opportunities that arise.
- To make our research focus on the area of reflection explicit and intentional to our teachers, as well as to our students.
- To encourage teachers to recognise how to more effectively use reflection as a
 pedagogical strategy to advance student thinking, learning and achievement in
 JTBCS.

- To encourage teachers to use reflective strategies (the reflection arrow, 3-2-1, Tweet poster, weekly reflection template and explicit learning intentions) as conceptual frameworks for developing and implementing educational objectives to achieve deeper learning in their students.
- To encourage teachers to encourage their students to think about reflection and how reflecting on their own thinking and learning can help their own understanding, meaning-making and progression.
- To promote an atmosphere of reflection, open discussion and sharing of practice amongst colleagues.

Anticipated outcomes:

Teachers will become more aware of the value and function of reflection, both on what and how their students learn. They will reflect on their own beliefs regarding the value of reflection in the learning and teaching in their own classrooms, and of the opportunities that may be planned for to provide windows of reflection in the learning experiences they plan. They will also consider the implication of the wait time they allow for student responses, and the implications these have on the depth of student thinking and learning. They will be encouraged to implement the reflection strategies outlined above to deepen the learning experiences of their students. They will be supported by the project team when doing so, and provided with additional templates and ideas. They will encourage their students to reflect on their learning and how they learn and to openly discuss this in class, thus deepening their thinking and learning.

2. Students:

- To explicitly raise awareness of reflection amongst the students. To encourage them to think about the importance and benefit of reflection in their thinking and learning and of specific strategies that may be used to guide their reflection.
- To strengthen their reflective capability through the use of effective strategies and to deepen their learning experience as a result.

• To encourage the development of smart thinkers who understand the way they learn, who view reflecting on what and how they learn as intrinsic to this learning and who see the value of it in their deepening understanding.

Anticipated outcomes:

Students will be aware of the importance of reflection and its capacity to promote deeper thinking and understanding and meaning making. Students will be aware that different strategies are effective in different learning situations. Students will feel more enabled to be self-directed in their learning and in the depth of thinking and understanding they achieve. Students will experience openness towards reflection in a positive encouraging environment and experience the challenge and joy of doing so.

3. Project team:

- To think about the function and value of reflection, to become more aware of our use of reflection strategies in the teaching and learning process in our classrooms, and to improve the number of opportunities we provide for student reflection in the learning and teaching that occurs in JTBCS.
- To investigate where the gaps exist between what we know about reflection and what we do in our classrooms.
- To rethink how we plan our lessons for greater depth of thinking through the
 use of reflective strategies. To explicitly make students aware of the focus on
 reflection and to provide more opportunities and more time for reflective
 thinking.
- To develop and implement a number of reflection strategies (the reflection arrow, 3-2-1, Tweet poster, weekly reflection template and explicit learning intentions) and to reflect on the implementation of these strategies.
- To increase the wait time (think-time, talk-time, write-time) we provide for student thinking and reflection.

Anticipated outcomes:

The members of the project team will become more aware of the function and value they place on student reflection in the teaching and learning process. They will engage in collegial discussion and reflection of their experience throughout the implementation process and the sharing of best practice. They will deepen the learning experiences in their classrooms through the implementation of effective reflective strategies. They will increase the wait time provided to students to promote thinking and reflection to lead to deeper thinking and understanding.

4. School:

- To instil a reflective ethos in our school.
- To share best practice and sharing of ideas culture of collaboration.

Anticipated outcomes:

A stronger community of practice will emerge and teachers will actively engage in implementing the reflection strategies.

Actions

In order to achieve our aims we carried out the following:

Management:

We met with the Principal and Deputy Principal to discuss our ideas on the project. This was important to encourage support and leadership. Together with the Deputy Principal we agreed our aim and our project team.

Project team:

The LSP7 project team was comprised of six members in total; including five subject teachers from a range of disciplines and the Deputy Principal. Members of the project

team attended the hub sessions in Limerick Education centre (LEC) in November 2015, January 2016 and March 2016, and brought information back to the project team, management and staff. Members of the LSP7 support team also visited the school in May 2016 to engage in a reflective discussion with members of the project team on progress to date and to offer constructive feedback. The team also took responsibility for analysing the survey results, for facilitating the focus group discussions and for drawing up the report.

Teachers:

Initially we gave a presentation to all staff in early December 2015 outlining the project and the aims and objectives. This was done at a staff meeting as it was important to inform all staff of LSP7. Throughout the year the project team gave input at staff meetings providing an update on how the project was progressing. We also held a teacher focus group in January 2016 to ascertain their points of view regarding the area of reflection and its role in the teaching and learning that occurs in our school. In addition to this the project team provided additional support through the provision of a number of reflection templates, suitable for a wide range of disciplines, to Department Co-coordinators for distribution to all teaching staff. The information was also displayed in the staff room on the display monitor.

At the staff meeting in January and later on in March 2016 subject co-ordinators and teachers were asked to include the area of reflection in their subject plans.

Students:

Students were made aware of the LSP7 through their subject teachers. As a team we decided that as it was the subject teachers who would be engaging in the learning process in the classrooms it was fitting for them themselves to introduce the students to the reflection strategies.

Resources

- Meeting time in school to facilitate group reflection, planning and discussion of progress.
- LSP meeting time in Limerick Education centre.
- Support network support from management and colleagues
- Whiteboards
- Reflection arrow
- Tweet posters
- Staff learning wall
- Monitor
- Internet
- PowerPoint presentations
- 3,2,1 strategy (see attached)
- Weekly reflection strategy (see attached)
- Photos/images

Data collection:

The research included both quantitative and qualitative aspects, including survey analysis, teacher focus group discussion, in class reflective practice as well as an indepth semi-structured student focus group discussion. This gave depth to the research, and allowed it to be rich and illuminative in nature.

Quantitative data collection:

- Student pre-implementation survey
- Student post-implementation survey

Qualitative data collection:

- Project team focus group discussion
- Teacher focus group discussion
- Student focus group discussion

Methodology

The research included both quantitative and qualitative aspects, including survey analysis, teacher focus group discussion and in-depth semi-structured student focus group discussion. These methodological approaches served to triangulate and validate our findings. The research was rich in reality and illuminative in nature.

The initial focus of the project was on the area of assessment. At the outset of the project we held a project team focus group in November 2015 based on the area of assessment and the general broad area of reflection. Following on from this focus group discussion it was decided to narrow the focus of the research in order to attain greater depth and meaning to our research findings. The research from this point on focused on the area of student reflection in particular and it was based on a cohort of 5th Year students specifically. 5th Year students were selected as it was believed that they had reached a level of maturity and had significant experience of teaching and learning in JTBCS and that this would validate and add insight to the research findings. 6th Years were not chosen due to their workload. The student cohort was chosen from a variety two disciplines; History and English.

At this stage we distributed a pre-implementation student survey to the 5th Year student cohort to ascertain their perspective and attitudes regarding reflection, the importance of it, and their awareness of reflective strategies and of whose role it is to reflect on learning.

We then entered the implementation phase of our research. This was conducted over a five week period, between the months of February and March 2016. Prior to implementing the reflection strategies in our classes, a presentation was made to the 5th year student cohort by one of the project team members describing the research that was being undertaken and their pivotal role in it. In this presentation (see appendix) it was made explicit that we were focus on the implementation of reflection strategies in our teaching and learning experiences with these students. It was also highlighted that they played a central and crucial role in the research and that their experience of the strategies and feedback relating to their use was encouraged and

welcomed. In January 2016 a focus group representing the wider teaching staff was also conducted to gain insight for their perspectives regarding the value and use of reflection and of reflective strategies currently in the teaching and learning that happens in John the Baptist Community School, and of the improvements that could be made.

In March 2016, following the implementation phase, we distributed a post-implementation student survey to the same 5th Year student cohort to ascertain their views following implementation of the reflection strategies outlined above. We also facilitated a student focus-group discussion in March 2016 to evaluate the efficacy of the reflection strategies and to provide greater depth to our findings.

Findings:

Teacher Focus Group:

In January 2016 a teacher focus group was held to ascertain their points of view regarding the area of reflection and its role in the teaching and learning that occurs in our school. The diverse group of teachers brought infinite knowledge and depth to the qualitative form of research, with subjects expanding from Science, English and Irish to Home Economics, Metalwork, and History. When asked if reflection is currently emphasised sufficiently in teaching and learning, the group unanimously felt "it is not integrated as much as it should be" and teachers felt they "don't have the luxury of being able to reflect as much as they would like". Teachers are under enormous pressure to finish courses and finding time to incorporate reflection is difficult.

It was evident from the focus group that all teachers present were promoting some form of reflective strategies with students, such as "Peer Assessment" when writing a speech in English or asking a student to identify "what I did wrong, what I did right and what I would do differently" when completing a metalwork project, to "Two Stars and a Wish" when correcting History Essays. However, all the teacher present had not utilised all of the above strategies mentioned. Teachers are aware of some strategies

for promoting reflection but it was evident that there was still scope to deepen understanding and encourage use of reflective strategies in learning and teaching.

It also came to light that when teachers did apply reflection strategies in their classroom they felt that it was evident that students "need to be trained", they "do not have a real understanding of reflection" and are "lacking the skills" to reflect successfully. As teachers we must provide them with the skill set and this project aims specifically to promote and achieve this among both teachers and students alike.

It was felt that for reflection to be successful, it must be a whole school approach where we explicitly promote and expose our students to various reflective strategies. Students need to be motivated and inspired "to take ownership". It was felt by the teachers in the discussion that is important that students are aware that "ultimately the student is responsible" for taking on board the ideas reflection. As teachers, in our role as facilitators of learning, we must provide the skill set, "break it down for the weaker students" and ensure we provide "flexibility" for the students who can extend beyond the task at hand.

From the discussion it was evident that we must "trust the teachers to try and achieve" the aim of whole school reflection. It was suggested that we create a file with a variety of strategies, but that we provide autonomy, where "the professionals decide which one is best" to suit their learners, their needs and their classroom environment. It was stated that all subjects are different so we cannot implement the idea of one size fits all. It was felt that reflection as an area will be a challenge as all teachers are not trained with reflection at the forefront of their thinking about the learning process, but as John Dewey declares "The path of least resistance and least trouble is a mental rut already made. It requires work to undertake the alteration of old beliefs".

When discussing what potential strategies to implement with the research cohort the "number line" was suggested. This is where students decide on where they are with their learning, assessing themselves on a scale from 1-10. This could be based on a particular lesson or where they are with a topic being taught. It can be used as an aid to encourage reflection 'in' or reflection 'on' learning. Teachers felt it was "quick", "continual" and also incorporated "numeracy" within the lesson. It was suggested that the number line could be placed on the board within classrooms. Another strategy that was suggested and arose

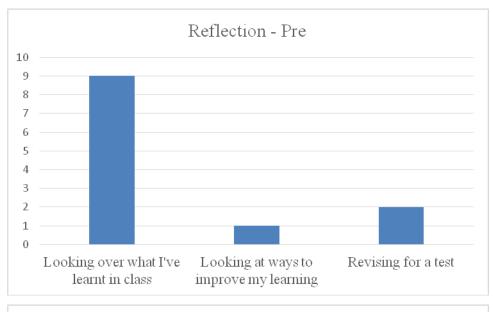
from the teachers themselves was the concept of 3-2-1, where students identify 3 things they learnt, two things they are unsure of and 1 question still remaining. Again this concept could be altered and questions posed to students could be changed to incorporate different levels of Bloom Taxonomy, to suit various subjects and to differentiate and cater for all student abilities.

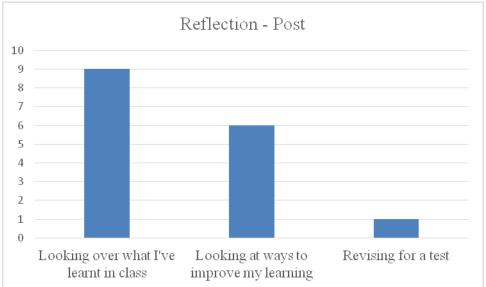
In conclusion, the teacher focus group was extremely fruitful, honest and invaluable to the project. The information gained from the collective professional insight and wisdom of our colleagues was instrumental in guiding the project team through the implementation phase of the research.

Findings of the Student Pre and Post-implementation survey:

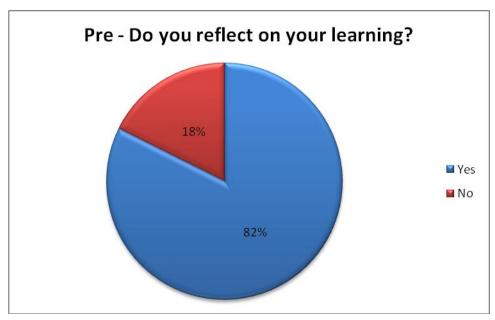
Question:	Pre-implementation	Post-implementation
Reflection means Improving my learning	6%	35%
Reflection means Revising for a test	12%	6%
Do you reflect on your learning?	82%	88%
Are you aware of strategies that help you reflect? Yes	65%	100%
Do you feel the implementation of reflection strategies would be worthwhile? Yes.	N/A	94% 6% said worthwhile but with younger students

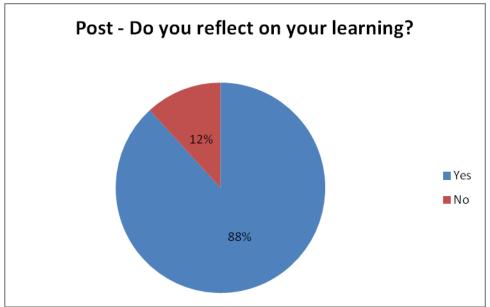
Following the implementation phase when the students were asked about what reflection means to them there was a notable improvement in their understanding that it involves 'looking at ways to improve my learning'. Originally, pre-implementation the figure was 6% and after the implementation phase this rose to 35%. There was a decrease in the number of students who responded that reflection was merely 'revising for a test' from 12% to 6%.





When asked do they reflect on their learning the value increase from 82% to 88%. This was also backed up further by the qualitative data gathered which suggested that although students stated that they reflected on their learning pre-implementation they were to a large degree associating the term reflection with revision, and lacked clarity with regards to what the term reflection entails. Following the implementation of reflection strategies the students responded with a true understanding of the meaning and nature if reflection.





When the students were asked were they aware of strategies to help them reflect 65% of those surveyed said yes in the pre-implementation phase, and this figure increased to 100% following the implementation phase of the research. This empowered these students as self-directed learners in the learning process, both in school and outside of it, and enabled them with specific strategies designed to promote reflective thinking and deeper understanding. Those strategies, integrated with effective questioning strategies embedded in school practice since last year, is invaluable to the depth learning these students can achieve.





The students were asked which strategies they felt were most effective and before the implementation of the strategies they referred mainly to white boards followed by graphic organisers with no responses to tweet poster or to learning intentions. Following implementation reference was made to the white boards also, and awareness of the use of and value of the tweet poster and learning intentions was also apparent.

When asked at the end of the survey if they felt it would be worthwhile to implement the reflection strategies in school 94% said yes outright, with the remaining 6% saying that it would be worthwhile but it needs to start with younger students to be most effective. So in essence all 100% of the student cohort affirmed the value of implementing these reflection strategies in John the Baptist Community School.

A number of student responses were quite striking in the value they placed on their experiences of using these strategies in their learning and thinking processes in class and at home, and also with regards to their awareness of their role as self-directed learners. One student stated that "I am responsible for my learning. The teacher is responsible for introducing me to the material as best they can, but ultimately the understanding of the material can only be achieved through my work". When asked who they felt was responsible for their learning one student replied, "myself as long as the teachers encourage us and show us how to reflect. Another student stated, referring to the value they feel these strategies provide, that they feel more enabled to use them to help them learn at home. He said they "teach us the methods of reflection that we can do at home. Another said "... to do reflection at home". And another student said "they allowed me to evaluate what I had learnt in class". It was felt that the reflection strategies "introduced different ways of teaching, for instance working in groups, with whiteboards or with mind-maps, and this encourages us to reflect on our learning and explore new ways of learning". Another student affirmed this belief saying, they "encourage me to read over my notes, make 3 points on things I learned in the class and a question on something that confused me". Overall it was felt that "reflecting on the things I had learned was very beneficial and helpful to my learning".

Findings of the Post-implementation Student Focus group:

The student focus group was conducted at the end of March 2016 following the post-implementation survey, and its findings highlighted the data elicited by the quantitative survey instrument.

The results of the student focus group showed that the students believe that reflection is a fundamental part of their learning process, and as a result of their attention being drawn explicitly to it they believed that they became more aware of the important role of reflection in their learning process and of the value that time spent reflecting on learning holds for them. They referred to both reflection on the material being learned, as well as on *how* it is learned; stating that reflection helped them to look

over and consider what they have done in class and what they want to improve and work in. Referring to reflection on HOW they learn they stated that they analysed "how we are learning", and what they "consider the best way to learn that material", as well as "what we have done ...and what we have to *improve* and work on". It was very much progressive in the approach taken, and focused on improvement and lifelong learning skills that will last long after leaving secondary education.

Which they were asked which of the five reflection strategies implemented they found to be most effective their responses varied, but mutually reinforced each other also. All students believed that the use of the mini whiteboards for reflective purposes was most effective. In this case the students were posed a reflective question by their teacher and had to devise a response and write it or illustrate it on the whiteboards. This was then used in the context of individual work, pair work or group work, to further reflect on what and how each student learns. It also served to stimulate them to think about other ways of thinking and learning and develop more insight about a topic and about the learning approach they took and compare it to other approaches. The whiteboards were also used in conjunction with the 3-2-1 strategy. As a result students said that they felt their understanding of what was learned in class was "clearer in your head".

There was also unanimous agreement that the clear and explicit visual display of the learning intentions of the class on the teachers white board, and referral to them throughout the learning process and at also at the end of the lesson was very educationally helpful to them. They said that it allowed them an opportunity to gain focus at the beginning of the lesson. By referring to the intentions throughout the lesson they were able to keep track of their learning as part of a more holistic view of a topic and "see where you are at". Referring to the learning intentions at the end of the lesson gave the students a chance to recap and consolidate what has been learned in class. They also felt that this was very valuable as they could see "the bigger picture" it "put it all together" and "put it in perspective". The learning intentions also organically interconnected with the use of the 3-2-1 reflection strategy, as well as the tweet it poster, and these further mutually reinforced student reflection.

When the students were asked if they felt their learning had improved as a result of an explicit focus being placed on student reflection in learning and teaching and as a result of the implementation of these reflective strategies they responded "most definitely". When asked to elaborate on this reply they stated that they "think better", "ask myself more questions", and that because they are thinking more about what and how they are learning they feel that they have a "better understanding". Another student said that it enabled them to "manipulate the information, instead of learning off chunks". Another student said they felt they were more "conscious of how well you are doing". They stated that it helps you to develop a broader understanding of "the whole picture a lot better" as time is planned for reflection on what has been learned, interconnecting the parts, focusing on their meaning, sharing insights from other students, visually displaying them and discussing them. This collaborative student-focused learning environment aided a much deeper understanding of what they were learning about, and also of how they learn and how they can do differently and improve on it. They believe that the reflection strategies allowed them scope to "find the gap" in learning, and to "map your learning" so that you are continuously trying to improve on it.

In relation to use of the reflection arrow attention was drawn to the need for a clearer explanation of its specific use by the teacher; for example, was it to encourage reflection on what you were learning in a specific topic or was it to encourage reflection on *how* you feel your learning is today, how you can improve on it and what strategies you could use to progress. As the arrow can be used in both ways it is vital that the teacher explicitly states what the focus is on in each particular lesson.

In relation to the 'Tweet it' poster they thought that using it in conjunction with the 3-2-1 strategy worked effectively in some cases, but was very time consuming for class. Ideally they suggested it would be better used as a homework exercise to bring in the class and use of the start of the next lesson. Using the 'Tweet it' poster with a question post-it proved to be very effective. Students stated that by writing up a question that still remained at the end of a lesson it focused their attention on what they had learned, analyzing it, identifying their gaps in knowledge through reflection, and seeking a means of improving on their understanding.

When asked do they feel that they engaged more as a result of this intervention they all said yes. They highlighted the "better communication" that was evident in the classes and the learning going on in them. They spent more time on identifying problems and were "definitely more active" and reflected "more on your learning".

In summary, the students believed the strategies to be very effective and realized their value in deepening thinking and understanding. They also become more aware of the role of reflection on learning and on how they learn and how others learn, and felt that they were starting to think meta-cognitively about their learning methods and on how to improve their own learning across the curriculum. They were also aware that this is a lifelong educational skill that is transferable to life outside of and beyond secondary education. They advised that the reflection strategies should be implanted in first year as they would provide a foundation in reflective thought that can be built upon from a young age. They also believed that they organically become part of the ethos of learning in the school then, and that the students grow up and develop with these as integral of their learning process. This will also enable them to realise that the reflection strategies are "to help them, not the teacher" and that they are for "your benefit - not for the teacher", as these students in the research group stated.

Outcomes- What was the learning?

1. What was the learning for the teacher?

Teachers were more aware of reflection, and about the value of the role of implementing reflection strategies in deepening the thinking and learning that happens in their classes.

Teachers were more aware of student's misconception of reflection; predominantly as revision Therefore through this awareness they could begin a dialogue around reflection, what it means and what its value is, in their classrooms and its use in self-directed thinking and learning.

Teachers were equipped with a number of reflection strategies, which were efficient

to use and have proven educational value.

Teachers were more aware of the gaps that exist between understanding what reflection is and the reality of their classroom practice and the time afforded to students to realistically reflect in class, and this awareness, it was hoped, would lead to deeper reflection on their practice and implementation of the strategies.

Teachers took ownership of their role as leaders in learning and as members of the community of practice in JTBCS, through discussion and collegial sharing of best practice.

2. What was the learning for the students?

Students had an increased awareness of reflection and of its role in deepening thinking and understanding and in taking ownership of their role as self-directed learners. They increased their meta-cognitive development relating to reflection and thinking about how they learn and how they can progress and improve.

They strengthened their reflection capabilities through raising awareness of and providing access to specific reflection strategies.

Their depth of learning improved. (Focus group discussion validates this).

They were more aware of their role as self-directed learners in the learning process.

Students became more persistent in their thinking, taking time to think, reflect, probe and develop well thought out responses. They had improved learning outcomes as a result, as they had a better understanding of the topics.

3. What was the learning for the team?

As the project team we ourselves became more aware of the role and value of reflection, as well as the amount of time and opportunities we provide our students with. We improved our own classroom practice through the use of the reflection

strategies which we researched, implemented and reflected on. As a result we were highly engaged in a process of self-evaluation of our practice and developed our professional skill base as a result.

As team members who are practicing teachers we were more aware of reflection opportunities in our teaching. We were more aware of the gaps that exist between 'knowing' the importance of reflection and the reality of our classroom practice, and this awareness led to deeper reflection on our practice and implementation of the strategies. The project team was composed of teachers from varying disciplines and this proved to be invaluable to the project as it progressed. It afforded the project team with the opportunity to draw on varying experiences, practices and obstacles and served to enrich our discussions. The result was that the project team members all felt that they grew professionally from the shared collegial experiences of the project.

The members of the project team found the research to be an overall positive experience. The periodic meetings in the Limerick Education Centre (LEC) were excellent for informing us on what was required and helped us to ground our ideas for the project.

The support from management in our school was very helpful to the project. A member of management attended many of the team meetings and the members of the project team met management on a regular basis to discuss issues and how to move forward with the project.

The timing of the implementation phase proved to be a constraint to the research due to the Easter break and term time being limited this year – it would have been more desirable to have a longer implementation period. It was felt that the duration of the implementation phase was too short for the reflection strategies to fully be implemented at the potential depth of engagement that would be facilitated by having additional time. A longer duration would better lend itself to development of both the strategies and the associated depth of thinking and learning, which is the nature of reflection and reflective thinking.

We found it to be deeply important to our research and to engagement with it, to have the students on board and aware of the research they are partaking in as they are the central focus in. Tapping into their unique perspectives and exploring their metacognitive development was illuminative.

As a project team we modelled our own lifelong learning through partaking in this research with the students, emphasising that learning is a lifelong process and the importance of being open to the learning process and grow from it through one's life.

As a team we learned to embrace the positives and the negatives. To learn from the experience and to do things differently next time so we are gaining from the richness of the experiences and expand our understanding as practitioners.

4. What was the learning for school?

From the schools perspective in terms of the teaching and learning process it enriched the methodologies that the school employs.

The project showed that leadership can and should be distributed and nurtured within the entire organisation. When teachers are encouraged to take on leadership roles in the teaching and learning there is an increased sense of motivation.

It highlighted the importance of getting staff on board and encouraging the professional development of a learning community in JTBCS in the very real context of improved learning outcomes in the students. This is the reason why we emphasized that the strategies were effective, efficient, and had value from the outset of the research. Collegial sharing of practice led to the actualisation of our vision as a learning community and as a progressive educational organisation in a very real sense.

If we as a school want to encourage this community of practice through the use of reflection strategies then subject departments must encourage and adopt the use of reflection strategies across their subject area. It must take a position on the agenda at subject meetings and become part of professional collaborative discussion both within and between subject departments.

The school as a whole must embed the strategies in school policy in particular the school improvement plan (SIP).

Recommendations:

- Opportunities for reflection need to be built in to the learning and teaching that occurs
 in our classes. Teachers and students need to be aware that reflection encapsulates
 both reflection in and on learning.
- Reflection needs to be discussed explicitly with students and they should be encouraged to engage in reflective thinking.
- Wait time needs to be lengthened to give time to reflect and to encourage more depth and higher cognitive thinking.
- Reflection strategies should be implemented in all classes and explained in such a
 way that students are aware of their value and feel empowered by their knowledge of
 the strategies.
- Learning outcomes should be stated at the start of lessons and referred to through the learning process and at the end of a lesson.
- The implementation of reflection strategies in school should reinforce developments made in literacy, numeracy and assessment (effective questioning strategies).
- To work towards a consistency in teaching and learning practices in our staff that makes the curriculum more accessible to all students
- To focus on suitably scaffolding tasks so students of all abilities are engaged in the reflective process.
- Use of the learning wall posters and templates to be continuously updated and developed. Email additional templates to all Department Co-ordinators for distribution. Inclusion of reflection arrow in first year classrooms.
- Coordinate with literacy group regarding the language around reflection and comprehension of it.
- Awareness of the fundamental need to include reflection as a topic for consideration

- when *planning* lessons at teacher level, but also for Departmental planning in the broader context of cross departmental planning.
- To continue to develop JTBCS as an organic learning institution proactive in identifying opportunities for further development and progression to enhance the learning experiences of our students and meta-cognitive and pedagogical development of our teachers.

Conclusion:

The Learning Schools Project 7 provided us with an invaluable opportunity to actively engage in the process of reflective practice and develop both our pedagogical practices as teachers and the learning outcomes of our students. The implementation of reflection strategies empowered us as teachers to deepen the thinking and learning experiences that occur in our classrooms and enabled our students to take ownership of their learning and occupy their roles as self-directed learners in JTBCS.

Partaking in the Learning Schools action research project encouraged the ongoing development of the learning community within the school and enhanced the capacity of individual teachers in leading learning. We are confident that the reflection strategies will continue to be implemented and embedded in the wider school context in the future.

Appendix: Reflection strategies

REFLECTION NUMBER LINE

