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**‘How does a co-operative learning strategy impact on students in a post-primary school in Ireland, including Special Educational Needs students?’**

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Dissertation in Partial Fulfilment of the Requirements for the Master of Arts in  
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Submission Date:

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## **Abstract**

The aim of this paper is to investigate the effect of a co-operative learning strategy on students in an Irish post-primary setting.

Literature will be explored in the area of collaborative learning. The new strategies being endorsed by the Department of Education and Skills (DES) as part of the new Junior Cycle will be looked at. The Jigsaw strategy will be examined in detail. The complex nature of inclusion will be examined and the gap between policy and practice in the Irish education system.

The study explores the experiences and perspectives of Irish post-primary students and how they responded to the Jigsaw strategy being implemented over a term in an Irish school.

An Action Research approach was used to carry out this mixed methods empirical study as the researcher was able to complete the research on site. The Piers-Harris 2 Self-Concept Scale questionnaire was used, both pre and post intervention. Triangulation was used by the researcher in an attempt to corroborate the findings. The students' monthly assessments were monitored for changes. Two students were interviewed post intervention for their opinions and feedback on the Jigsaw strategy.

The Piers-Harris 2 Self-Concept questionnaire was administered to a small group of 11 Junior Certificate Schools Programme (JCSP) students. The Jigsaw Strategy was implemented using Junior Certificate exam papers. The same questionnaire was re-administered and changes were noted. A reflective diary was kept by the researcher which noted students' opinions and reactions.

The limitations of the study are the small sample size. The study was of a short duration and may not have attained the same results if it was carried out over a longer period of time. Notwithstanding the limitations, the study in its findings provide particular insights for teachers, students and researchers about key aspects of the new Junior Cycle, particularly for JCSP students and students with SEN.

The results overall showed a positive response from the students across the three main areas examined. 1. Self-esteem. 2. Academic. 3. Inclusiveness of the strategy.

Although all students had positive results on their monthly assessments, not all students had positive changes post intervention in their Piers- Harris 2 Self- Concept Scale responses.

The findings showed that while collaborative and inclusive education is undoubtedly beneficial for students, it is being compromised by the challenges and barriers that exist within the education system.

In conclusion, more supports are needed for both teachers and students with SEN. Teachers' need more Continuing Professional Development (CPD) and Special Needs Assistants (SNA) need more training in order to fulfil the assessment tasks required as part of the new Junior Cycle.

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<b>Table of Contents</b>	<b>Page Number</b>
Abstract	5
Acknowledgements	6
Table of Contents	7 +8
List of Abbreviations	9
List of Appendices	10
List of Figures	11
<b>Chapter 1- Introduction</b>	
1.1 Background to the Research	13
1.2 Purpose of the Study	14
1.3 Context in Literature	15
1.4 Research Aim	15
1.5 Research Site	15
1.6 Structure of the Thesis	16
<b>Chapter 2 – The Literature Review</b>	
2.1 Introduction	18
2.2 What is Collaborative/Active Learning?	18
2.3 Alternative Strategies	19
2.4 Special Educational Needs (SEN) and Inclusivity	21
2.5 What is Inclusion?	23
2.6 Updates to improvements in SEN.	24
2.7 Conclusion	25
<b>Chapter 3- Methodology</b>	
3.1 Research Aims and Objectives	28
3.2 Research Design	28
3.3 Sampling Procedure	31
3.4 The Sample	31
3.5 Why use the Piers- Harris 2 questionnaire?	32
3.6 Data Collection Methods	33
3.7 Ethical Considerations	35
3.8 Data Analysis	36
3.9 Limitations	37

3.10 Conclusion	37
<b>Chapter 4- Results and Findings</b>	
4.1 Descriptive Analysis	39
4.2 What impact does the Jigsaw strategy have on students' self-esteem? (Research Objective One)	39
4.3 Are there any academic benefits for the students? (Research Objective Two)	44
4.4 How do the students react to the strategy? Do they feel included? (Research Objective Three)	46
4.5 Reflective Diary Analysis	47
4.6 Discussion of findings on self-esteem	48
4.7 Discussion of findings on academic benefits	49
4.8 Discussion of findings on inclusion	49
4.9 Summary of Findings	49
<b>Chapter 5- Conclusions and Recommendations</b>	
5.1 Conclusions outlined	51
5.2 Shortcomings of the study	51
5.3 Application of this study	51
5.4 Researcher's Reflective Insight	51
5.5 Recommendations	52



## **List of Abbreviations**

**SEN:** Special Educational Needs

**DES:** Department of Education and Skills

**NCCA:** National Council for Curriculum and Assessment

**NFQ:** National Framework of Qualifications

**JCPA:** Junior Cycle Profile of Achievement

**JCT:** Junior Cycle for Teachers

**PDST:** Professional Development Service for Teachers

**PHD:** A Doctor of Philosophy

**PME:** Professional Masters of Education

**SERC:** The Special Educational Review Committee

**UNESCO:** United Nations Educational Scientific and Cultural Organization

**EPSEN:** Education for Persons with Special Education Needs Act

**NCSE:** National Council for Special Education

**SNA:** Special Needs Assistant

**CBA:** Classroom Based Assessment

**CPD:** Continuing Professional Development

**JCSP:** Junior Certificate Schools Programme

**DEIS:** Delivering Equality of Opportunity In Schools.

**WSE-MLL:** Whole-School Evaluation- Management, Leadership and Learning

## **List of Appendices**

**Appendix 1-** Principal Consent Letter

**Appendix 2-** Parental Information sheet

**Appendix 3-** Student Information sheet

**Appendix 4-** Parental Consent Letter

**Appendix 5-** Student Consent Form

**Appendix 6-** Student Interview Questions

**Appendix 7-** Timeline for the Intervention

**Appendix 8-** Piers-Harris 2 Questionnaire Results

**Appendix 9-** Piers- Harris Questionnaire Sample

**Appendix 10-** LYIT Ethical Application Form

**Appendix 11-** Monthly Assessment Results

**Appendix 12-** Monthly Assessments Results Bar chart

**Appendix 13-** The New Allocation Model for SEN

**Appendix 14-** Extracts from the Reflective Diary

**Appendix 15-** Student Interview Responses

<b><u>List of Figures</u></b>	<b><u>Page Number</u></b>
<b>Figure 1.1-</b> School-life Analysis Bar-chart	<b>40</b>
<b>Figure 1.2-</b> Student Self-Esteem Bar-chart	<b>42</b>
<b>Figure 1.3-</b> Overall Student responses to BEH and INT	<b>43</b>
<b>Figure 1.4-</b> Monthly Assessment Data	<b>44</b>
<b>Figure 1.5-</b> Changes to Assessment Results	<b>45</b>

# **Chapter One**

## **Introduction**

The Irish education system is undergoing rapid changes at present with the new Junior Cycle. This year, 2017, saw the replacement of the Junior Certificate with the Junior Cycle Profile of Achievement (JCPA), which will record exam results exams as well as other student achievements, including sporting, debating and other academic activities. The subjects that have been rolled out so far are English, Business, Science, Art, Modern Foreign Languages and Irish. The researcher is a teacher of both Irish and English and therefore has already received some training in preparation for this new chapter in Irish education. Other subjects have received general training but not specific to their subject at this stage. Not all teachers of the subjects that have been rolled out have received training yet due to issues with the union for teachers.

### **1.1 Background to the Research**

#### **Changes to the Junior Cycle**

In recent years, there has been many changes to the Irish education system, particularly at second level with the introduction of the new Junior Cycle (Department of Education and Skills DES, 2015). The first Junior Certificates syllabus was introduced in 1989 and examined in 1992. It replaced two earlier examinations called the Group Certificate and the Inter Certificate. The Junior Cycle is completed after three years of study, usually when students are 15 years old.

The new Junior Cycle features newly developed subjects and short courses with a focus on key skills and new approaches to assessment and reporting ( National Council for Curriculum and Assessment, NCCA, 2015). The current system's replacement is being rolled out subject by subject. It is thought that the old exam-based model "quickly led to rote learning and teaching to the test" ( Faller, 2014). All students completing their Junior Cycle will study eight to ten subjects. The Junior Certificate and the new Junior Cycle are both aligned to level 3 on the National Framework of Qualifications (NFQ). At the end of the third year, students will receive a Junior Cycle Profile of Achievement (JCPA). As part of the Framework for Junior Cycle (2015) the reporting process at Junior Cycle will culminate in the award of the JCPA to students. The JCPA will be awarded by the school to the student. It will report on student achievement across a broad range of areas of learning in the Junior Cycle. The JCPA will offer parents/guardians a clear, broad picture of their child's learning journey over the three years of Junior Cycle (DES, 2017a).

There has been many different strategies recommended to teachers to ensure that students are active, engaged and that they take responsibility for their own learning. Among the strategies being endorsed are, Think, Pair, Share, Brainstorming and the Jigsaw Strategy. As a teacher of Irish, it can be challenging to try and make the subject exciting and interesting for the students as the curriculum is quite wide-ranging and heavy. The Jigsaw strategy is basically a method of organising the students in the classroom into groups. These groups are dependent on each other to succeed. In order to complete an assignment, the groups must come together to complete the 'jigsaw'. The Jigsaw strategy permits the students to be active while allowing them to be creative at the same time. Al-Salkhi (2015), confirms this and suggests "it improves the creative and logical thinking of students" (p. 111).

Although the Department of Education are suggesting that teachers try out these methods as part of the new Junior Cycle, very little evidence and research is available on the merits of it for all students and as an inclusive strategy. Is it a case of one size fits all? The Department of Education has not offered any alternatives or variations of these strategies for students of different abilities. Therefore, the researcher is eager to find out if the Jigsaw Strategy is only suitable for certain students. The aim is to investigate if the Jigsaw Strategy in particular works with a mixed ability class, some of whom have Special Educational Needs (SEN).

### **Purpose of the Study**

The purpose of this study is to try and understand if the strategies being endorsed by the new Junior Cycle are beneficial and useful to students (Department of Education and Skills, DES, 2015). Do these strategies help to fully include students of all abilities and do these strategies help to improve student engagement, self-esteem and motivation? The new Junior Cycle has *eight key skills*, the DES, 2015 claim that the Jigsaw strategy uses the following skills:

1. Managing information and thinking.
2. Managing myself.
3. Being Literate.
4. Working with Others.

Co-operative learning strategies have been used previously by the researcher but not with this particular group. The researcher wants to further examine them and see if a particular strategy would work with a different group. The Jigsaw strategy was previously used by the researcher with a higher level group. This time it will be used with a mixed ability group with different needs. The researcher wants to look at how the results of the strategy may have an impact on their self-esteem and confidence as well as looking at their academic achievement. This research is important as the evolving Junior Cycle is placing more responsibility on the student as a learner. Are the students coping with these changes and is their self-esteem affected?

The results of the findings will be shared with other teachers in the school while at all times protecting the students' anonymity. The results will hopefully help colleagues to implement their own cooperative learning strategies and adapt to their own subject area. These strategies should be used by all teachers as part of the new Junior Cycle. Most teachers are involved in Continual Professional Development (CPD) with the new Junior Cycle at present. As well as attending CPD, the researcher is completing a Masters of Art in Learning and Teaching (MALT) in order to gain a deeper understanding of how teaching and learning can be improved for both the researcher and the students. The researcher is mindful that this is a small scale study with certain limitations. This is just a snap-shot of a small group of students over a limited time-frame. Cohen et al (2011), suggest that studies in social sciences do not always include the effects of social change and process. Ensuring validity is essential. An appropriate timescale, methodology and selecting the correct instruments for gathering the data are pivotal to maintaining reliability and consistency (p.198). As the researcher teaches the group, they are aware they could be biased and will therefore endeavour to be as objective as possible.

The researcher hopes to improve student achievement and the students overall feeling of success and participation in lessons.

## **1.2 Context in Literature**

The literature review can be found in chapter two. It outlines the different strategies being presented to teachers as part of the new Junior Cycle training. Literature will be examined in the area of collaborative or co-operative and active learning. Some of the new Junior Cycle strategies will be assessed, specifically the Jigsaw strategy. The Challenges and barriers that exist in the Irish post-primary sector will be looked at, in particular inclusion and how inclusive is the new Junior Cycle for students with SEN. The historical context of SEN in Ireland and how it has progressed in the area of SEN will be outlined also.

## **1.3 Research Aim**

The aim of this research is to investigate ‘How does a co-operative learning strategy impact on a post-primary school, including special educational needs students in Ireland? This will be accomplished by the following research objectives:

1. What impact does the Jigsaw strategy have on students’ self-esteem?
2. Are there any academic benefits for the students?
3. How do the students react to the strategy? Do they feel included in the class?

The researcher aims to:

1. Examine ways of looking at the students’ self-esteem and see have they experienced any success from using the jigsaw strategy. The students will receive the Piers-Harris 2 questionnaire pre intervention. After the intervention, the students will receive the same questionnaire and the results of these findings will be analysed.
2. The results from the students monthly assessments will be examined to see if the students are improving academically in addition to enhancing their self-esteem.
3. Examine if the students feel more included in class or in their group, an interview will be conducted with a few students at the end in order to get their feedback. A reflective diary will be kept which will record any observations made during the intervention.

## **1.4 Research Site**

The researcher is a teacher in a co-educational school in a rural town in East Donegal. This school was the research site. The school has had educational disadvantaged status since 1992. The school is a Delivering Equality of Opportunity in Schools (DEIS) school and has 550 students on the roll at present, 11 Special Needs Assistants (SNA) and 109 students with psychological assessments. This accounts for approximately 20% of the school population. The school has a Home School Community Liasion (HSCL) officer. A wide range of programmes are on offer for the students including, Junior Certificate Schools Programme (JCSP), Transition Year, Leaving Certificate Applied (LCA), Leaving Certificate Vocational Programme (LCVP) and a School Completion Programme (SCP). Given the schools disadvantaged status, it is of utmost importance to retain and engage with as many students as possible. It is hoped that this study will encourage and promote self-esteem thus having a

positive effect on retention and student well-being. It is the teacher's responsibility to ensure that "all students feel equal and valued" ( DES, 2017 p.17).

#### **1.4 Structure of the Thesis**

This thesis is divided into five chapters. Chapter one provides an introduction to the research and the background to the research. Chapter two will examine the literature around collaborative learning and inclusion in Ireland for students with SEN. Chapter three outlines the research methodology employed by the researcher for this project. Chapter four discusses and analyses the results of the data received over the duration of the intervention. Chapter five discusses conclusions and recommendations.



# Chapter Two

## **Chapter 2: Literature Review**

### **2.1 Introduction**

This chapter is reviewing literature in the area of post-primary education. It will examine the different strategies being presented to secondary school teachers in Ireland at the new Junior Cycle training. Literature will be examined in the area of collaborative and active learning. Some of the strategies being endorsed by the new Junior Cycle will be assessed, in particular the Jigsaw strategy. These strategies are all collaborative and active methods. The Jigsaw strategy will be examined in detail. The chapter will also look at the challenges and barriers that exist in trying to achieve inclusive education. Literature will be examined to assess if the Jigsaw strategy is suitable for a mixed ability class, some of whom have Special Educational Needs (SEN). The historical context of SEN in terms of how Ireland has progressed in the area of SEN including inclusion and how inclusive the Irish post-primary education system is will be outlined also.

### **2.2 What is collaborative/Active learning?**

The Jigsaw strategy is a collaborative strategy. The Jigsaw strategy is described as a ‘cooperative learning activity’ in the new Junior Cycle (Junior Cycle for Teachers, 2015). Discovery learning, which is another term used to describe active learning, predates the introduction of the new Junior Cycle. Dewey and Bruner (cited by Santrock, 2004, p.397) in particular promoted the idea of discovery learning and agreed that as long as teachers use “stimulating activities”, learning would occur. Qamar (2016), concurs with this by stating that if the learner is made feel like an equal partner and is stimulated learning will occur. A safe, comfortable environment is essential for the students, especially when trying a new intervention. Students must feel comfortable and at ease in order for any profound learning to occur. This is essential especially when the class is a mixed ability class with varying degrees of need.

A variety of phrases have been coined to describe a shift in learning from the teacher-led didactic approach to the student-centred active approach. Various educators have developed and used approaches to teaching that fit the criteria for student-centred learning. Many of these educators have created original names for their approaches. As a result, there is a broad spectrum of named approaches, which include:

- Active Learning (Bonwell and Ellison, 1991)
- Collaborative Learning (Bruffee, 1984)
- Cooperative Learning (Johnson, Johnson and Smith, 1991)
- Peer Led Team Teaching (Tien, Roth and Kampmeier, 2001)
- Team-based Learning (Michaelson, Knight and Fink, 2004)
- Discovery Learning (Bruner, 1961)
- Student-Centered Learning. (Froyd and Simpson, 2008)

A huge amount of literature can be found on student-centred learning (SCL). The students are often described as being “active participants” and the learning is often collaborative. (Attard et al., 2010) (p.5). Much progress has been made in education since the 19<sup>th</sup> century.

However, some educators are still heavily influenced by psychologists, Jean Piaget, John Dewey and Maria Montessori. These educators replaced the traditional curriculum with hands-on activities and group work. Santrock (2004) discusses Piaget's view that "students learn best by making discoveries, reflecting on them and discussing them" (p.50). The Jigsaw strategy encourages students to make their own discoveries and allows them to explore things for themselves and as part of a group. Discovery learning stands in contrast to direct instruction approach. John Dewey and Jerome Bruner in particular promoted the concept of discovery learning by encouraging teachers to give students more opportunities to learn on their own. The key to successful learning is argued by many experts. However, most agree that the learning environment must be safe, comfortable and welcoming in order for any deep understanding to take place (Dallat, 2009). For a student to feel comfortable they must fully understand what they are being asked to do. The instruction must be clear as this has a direct impact on the learning that occurs in the classroom. Sowell, (2017) states that a lesson "becomes chaotic and fails" (p.10) when students are uncertain of the activity and the instructions.

Iran-Nejad and Stewart (2010) confirm the importance of "knowing and understanding" and describe them as "vital educational objectives" (p.64). Bloom (1984) reminds us that "our instructional material" and "our classroom teaching methods rarely rise above the lowest category of the Taxonomy-knowledge (p.13). Nonetheless, knowledge and understanding are of paramount importance in any language, before progressing to anything in the 'higher order' category. The higher level of Bloom's Taxonomy i.e create, evaluate and analyse is achieved through kinesthetic and tactile modalities. These modalities can be found in the Jigsaw Strategy by involving the students in discussion and achieving their particular goal (Dhage, 2016).

Many experts argue the benefits of this strategy, including, that the labour of learning is divided and it fosters negotiation and communication skills (Amador and Mederer, 2013).

### **2.3 Alternative Strategies:**

Other strategies being suggested to teachers include, Think, Pair, Share (TPS) and Brainstorming. Both strategies are collaborative and involve student participation and engagement. TPS is a strategy in which students work together to solve a problem or answer an assigned question. The strategy requires students to:

1. Think individually about a topic or answer to a question.
2. Share ideas with their classmates.

Kaddouva, (2013), states that TPS provides students with adequate time to think in order to increase their responses. Brainstorming is a process encouraging students to generate ideas in a creative manner. It gives students a chance to tap into previous knowledge and form connections with the current topic (JCT, 2015). TPS differs from the Jigsaw strategy in that students are in a group when utilising the Jigsaw strategy, whereas for TPS, the response from students can be on an individual or group basis. The Jigsaw strategy requires the students to be dependent on each other in order to complete the assigned task.

The Jigsaw Strategy, as a collaborative learning strategy appears to be more popular in teaching especially since the introduction of the new Junior Cycle. The Jigsaw Strategy is a teaching

method of organizing student group work that helps students collaborate and rely on one another. Sabbah, (2016), states that the strategy “reinforces positive interdependence and individual accountability” (p.446). Collaborative learning can be defined as a set of teaching and learning strategies promoting student collaboration in small groups in order to optimise their own and each other’s learning (Johnson and Johnson, 1999).

The basic elements that **make cooperation work** are:

- Positive interdependence.
  - Individual accountability.
  - Promotive interaction.
  - Appropriate use of social skills.
  - Periodic processing of how to improve the effectiveness of the group.
- (Johnson and Johnson, 1999).

Many researchers discuss the merits of collaborative learning, however, more recent research suggests that it is not without flaws (Janseen and Wubbels, 2018). They recognised four main obstacles to effective collaboration:

1. Lack of Collaborative skills.
2. Free-riding.
3. Competence status.
4. Friendship.

This study looked at both teacher and student perceived ideas of collaboration, if it is effective and what challenges were encountered while partaking in a collaborative task. The limitations of the study were that it used a relatively small sample size comprising of 19 teachers and only 23 students. Much of the information was collected from students who majored in Science. A cross-sample of subjects may have yielded different results.

Petty, (2002) argues that the Jigsaw strategy has “high effect sizes” (p.9). Essentially ‘high effect size’ means there was a large difference between the two groups in this study. One group who used the Jigsaw strategy and another group who did not use it. An outcome with a high effect size would be considered a successful one. Hattie and Donoghue (2016), however, argue that high effect size does not necessarily mean the strategy was successful. They state that people often assume that if a strategy has a low effect size, then the strategy has not been successful. Hattie and Donoghue disavow this interpretation. They state that the stage at which the strategy is implemented is crucial. They argue that there are different stages in the learning cycle that must be considered when assessing if a strategy was successful or not.

O’ Brien, (2016) alludes to the Jigsaw strategy as being ‘a quiet revolution in teaching and learning’. Mengduo and Xiaoling, (2010) go a step further and suggest that the Jigsaw strategy can reduce students’ reluctance to participate. Learners generally become engaged and active learners. The teacher takes on the role of a facilitator rather than a dictator. It is a very good formative assessment strategy and allows the teacher to record and receive feedback in an

informal manner, while walking around the room (Ralston et al 2017, p. 93). The teacher can quickly establish if they are any ‘gaps’ in learning and allows for progression in future lessons.

The Jigsaw strategy is currently being endorsed by the Professional Development Service for Teachers (PDST) as part of the new training for the new Junior Cycle. Although most teachers are now engaged in the training for the new Junior Cycle, teachers need additional supports and guidance to ensure that both the teaching and learning is enhanced. Teachers need affirmation that the strategies being administered are positive for the students and suggestions on how to select the most suitable strategy for each class. Currently teachers are given a list of suggested strategies and must decide themselves which one may be most suitable without any further guidance or instruction. Ralston et al (2017) echoes many teachers concerns regarding this pedagogical change. They argue that two of the main barriers to collaboration include ‘concern that collaborative activities would reduce time for content coverage’ and they state that another barrier is lack of support for teachers.

Sahlberg, (2007) discusses the education system in Finland. The Finnish system does not have a ‘high-stakes’ exam at the end. Teachers must have a minimum teaching qualification of a Masters in Education in Finland. Since this was enforced, Finland has saw an upsurge in school principals and teachers possessing a PHD. The Irish system has only very recently changed from the one year Higher Diploma in Education to a two year Professional Masters of Education (PME) in 2014. Therefore, there has been some progress made in the Irish system but there is still more to do. Teachers in Ireland are often under pressure to fulfil the needs of a heavy curriculum.

Collaborative work is something which the National Council for Curriculum and Assessment (NCCA) are encouraging for the new Junior Cycle, citing it as “impacting on their achievement, self -esteem and motivation for learning” (NCCA, 2013). The new Junior Cycle advocates the Jigsaw strategy and are encouraging teachers to try this with their students. They suggest that each student is ‘empowered’ and ‘challenged’ by the strategy and they find it an ‘effective’ tool for learning (NCCA, 2016). Meng, (2010) goes even further and suggests that this method involves teachers and students being “in a state of dynamic cooperation” and build up an intimate atmosphere in the classroom” (p.502). With so many agencies promoting these cooperative strategies and collaborative work as part of the new Junior Cycle, it is imperative to find out if these strategies work for students in a mixed ability class with varying degrees of need and in particular students with Special Educational Needs (SEN).

## **2.4 Special Educational Needs (SEN) and Inclusivity**

The Education for Persons with Special Education Needs Act (EPSEN) recognizes that SEN may arise from **four** different areas of disability:

- Physical
- Sensory
- Mental health
- Learning disability or from any other condition that results in the child learning differently from a child without that condition. (NCSE, 2014, p.10)

Definitions of SEN vary widely across countries as they are specific to each country’s legislation.

Prior to 1960's in Ireland, students with SEN were not educated in the traditional mainstream setting. Students with disabilities and learning difficulties would have been marginalised within or excluded from education due to their apparent incapacities (Minou, 2011). Criticism against the segregated nature of education for students with SEN intensified during the 1960's and 1970's (Michailakis and Reich, 2009). This may have been attributed to the world-wide civil rights movement of that era (NCSE, 2010).

England's progress towards an inclusive system of education began in 1978 with the publication of the The Warnock Report. Lady Warnock rejected the medical model of educational needs and advocated a move towards "a more responsive or social model" where she recognised the need for social interaction between the student with SEN and their peers. It became clear that this marked a significant turning point in SEN in Ireland (Griffin and Shevlin, 2007). The segregation of students with SEN continued largely unchallenged in Ireland until the early 1990's. Ireland was obviously taking note of the changing attitudes towards people with disabilities on an international scale and it recognised the need to create a society that was more equitable.

A review committee was set up but it took a considerable amount of time before any action was taken. The Special Educational Review Committee (SERC) report was set up in 1993 (DES, 1993). The SERC summed up its position regarding inclusion of SEN students by stating that it favoured "as much integration as is appropriate with as little segregation as necessary" (p.21).

The SERC report had helped to prepare Ireland for The Salamanca Statement in June 1994. The Salamanca Statement called for inclusion to be the 'norm'. 'Regular schools' are paramount in 'creating welcoming communities, building an inclusive society and achieving education for all'(United Nations Educational Scientific and Cultural Organisation , UNESCO,1994, p.2). Ireland became a signatory to this statement and therefore was now compelled to adapt the principal of inclusive education and enrol all students unless there were 'compelling reasons for doing otherwise'. The word inclusion is peppered throughout this statement. This is highly significant as the word integration was rarely being used. This was a huge breakthrough for people with SEN, as this was the first time their rights as an equal person to be fully included in education were being recognised.

By the time the Education Act 1998 materialised, SEN appeared to be more inclusive and gave parents a choice as to where they wanted to send their child. The onus was on the school to adapt and cater for the child (DES, 1998).

The Cromien report published in 2000 stated that the Department of Education in terms of its dealing with Special Education had 'neither the expertise nor the resources to meet the emerging demands of the system'(DES, 2000, p.24).

The Education for Persons with Special Education Needs Act (EPSEN) is a 'milestone' in education legislation provision for students with SEN. The central purpose of the Act was to ensure inclusive education unless there are specific reasons why a specialised placement is required for the child (Shevlin et al, 2008, p.142).

Since the EPSEN Act has been passed there have been a number of advances in the area of SEN such as the establishment of the National Council for Special Education (NCSE). It provides planning, assessment and service delivery to teachers and Special Needs Assistants

(SNA's). The NCSE also co-ordinates educational services for students with SEN through Special Educational Needs Organisers (SENO's). While there has certainly been progress in the area of SEN, Inclusion Ireland (2014), discusses how there are still key sections of the EPSEN Act, that give statutory rights to assessment, education plans and appeals processes are currently 'on hold' or deferred.

The **sections of the EPSEN Act** which have **not been implemented** are those which would have conferred a statutory entitlement to:

- An educational assessment for all children with SEN.
- Consequent development of a statutory Individual Educational Plan (IEP).
- The delivery of detailed educational services on foot of this plan.
- An independent appeals process.

## **2.5 What is Inclusion?**

Pre -1990's , inclusion was not a word frequently used in Irish schools. Integration was a term most would have been acquainted with. Integration is where the student is expected to adapt to their environment. 'In an integrated school or classroom, the burden of adaption to what may be a largely unmodified situation is often placed on the student who learns differently'(DES, 2007, p.39). Inclusion is viewed as a much broader concept than integration.

Tilestone et al. (1998) define inclusion as an opportunity for the student "to participate fully....in everyday society" (p.16). This is a fairly broad definition of inclusion and refers to inclusion beyond the classroom. Shevlin et al, (2002) states that inclusion is something that has become central to the education of students internationally. Inclusion is a process and there is no definite method in achieving it. 'It is equally important to recognise that there is no single route towards inclusion that will suit all schools' (H. M. Inspectorate, 2002, p.3).

O' Gorman and Drudy, (2010), confirm that there has been a huge increase in the number of SEN students. The researcher would suggest there are even more now since this paper was published. The situation had declined dramatically over the past decade with the decline in the economy and the many cutbacks that followed. With some supports being withdrawn for some SEN students, it is more important than ever that teachers find ways to retain and engage these students at school and not allow them to become 'passengers' in the education system. (William, 2012). There has been a slight improvement in the past year with the new SEN allocation model and the announcement from the Minister for Education and Skills that there will be almost 1000 new SNA from September 2018.

## **2.6 Updates to improvements in SEN**

In September 2017, a new model for allocating Special Education Teaching resources to mainstream primary and post-primary schools was introduced. The new allocation model (Appendix 13) has been devised by a working group established by the National Council for Special Education (NCSE) and in collaboration with parents, teachers and other stakeholders.

The **developments in SEN** in 2017 are as follows:

- The SEN hours are now granted to the school and not the student with the introduction of circular 0014/2017 (DES, 2017b).
- Hours are now allocated based on the school profile.

There are a number of components that make up the **school profile**:

1. School's social context.
2. The number of students performing below a certain threshold on standardised tests.(below a STEN score of 4).
3. Gender.
4. Junior Certificate results in Maths and English from the school years 2013/2014 and 2014/2015.

The Department justified these changes by stating that the old system put unnecessary labelling of a student and the allocation of their hours were based on the student's disability category rather than the needs of the student. Several schools were piloted and the results were fairly positive. One of the main benefits of the new model is that students no longer have to wait for a diagnosis, they can get immediate support. The hours would appear to be used for those most in need and those who do not need the help are no longer labelled or have to be given resource hours that they may not necessarily need or want (DES, 2017b).

Mc Donnell (2003) believes that the introduction of legislation that is 'isolated' from the needs to address the heart of the problem is likely to have minimal impact. This view is endorsed by Kinsella and Senior (2008), who suggest that a cultural shift from a focus on the 'individual' to 'organisational' pathology is required if inclusion is to become a reality in Irish society. It is fully accepted and acknowledged that while the DES have made some progress over the past year, it is merely more legislation. Teachers on the ground need supports. While the allocation of almost 1000 SNA is urgently required, it is not enough. SNA want more training also. A recent survey from the SNA union FÓRSA has revealed that 2,700 SNA have had no support from the DES or their individual schools in accessing basic or ongoing professional development. An astounding 60% of respondents who have worked as an SNA for more than a decade have had very little, if any access to officially-provided training or professional development (Fórsa, 2017).

More recent supports for students with SEN include the announcement in May 2018 that almost 1000 new SNA would be allocated to schools from September 2018. There has been a 42% increase in SNA since 2011. DES (2018b), "More children with SEN are participating....and we are investing more than ever to support this". The Minister acknowledges the ever increasing numbers of students with SEN in schools. The new allocation model for allocating resource teachers has been introduced and has saw an additional 900 teachers employed since September 2017. While the Minister recognises that there are increasing numbers of students entering schools, there are very few supports put in place after they enter. For example, the new Junior Cycle requires students to complete two Classroom- Based Assessments (CBA's). Special provisions may be put in place for a student with a 'specific physical or learning difficulty' (JCT, 2016). However, many teachers are reporting that students with SEN lack confidence to perform recorded assessment tasks and sometimes even may not come to school



on the day that the CBA is being completed. It is imperative that all students are included and that their confidence and self-esteem is enhanced by the new Junior Cycle.

Forian (2013), suggests that class teachers often use strategies that are matched to the purposes of learning for their own class/group. She suggests that as educators, it is important to try and move towards providing rich learning opportunities that sufficiently meet the needs for 'everyone' (p.17). The strategies being endorsed by the new Junior Cycle may not include 'everyone'.

In order to improve self-esteem, students must feel at ease and comfortable with their surroundings and their teachers. To be inclusive, one must not merely consider trying to include all students. Inclusion concerns issues of gender, ethnicity, class, social conditions and health. (Coolahan et al, 2017). Some of the literature will argue that the culture of a school has a huge influence on how inclusive a school is. Corbett (1999), recognised that changing the culture of a school may be a necessary step in making the institute more inclusive. This may involve encouraging all staff to be open to the benefits of cooperative learning strategies. More recent studies suggest social justice is closely linked to inclusion (McMaster, 2015) and (Mitchell, 2014). Flatman Watson (2009), categorically states that the Irish education system does not meet the needs of families, educators or the students.

Brennan (2017) concurs with this and states the following as the main barriers to inclusion and SEN:

- Insufficient teacher education (Continued Professional Development, CPD).
- Teachers reporting a lack of knowledge, confidence, competence. Re. inclusive practice.
- Lack of teacher collaboration, lack of time.

The real challenge lies in the fact that many teachers feel ill-equipped to promote and enact the new Junior Cycle strategies while trying to strive towards inclusion for all students. A lack of CPD and an ever increasing work-load certainly adds to the pressures placed on teachers in the post-primary setting. Cook (2002), concurs with this and states that a positive attitude is important, he describes teacher development and training as being 'central' to successful developments in schools.

## **2.7 Conclusion**

This chapter has examined the national and international literature pertaining to the Irish post-primary education system. Literature was explored in the area of collaborative learning. The new strategies being endorsed by the DES were looked at, in particular the Jigsaw strategy. The complex nature of inclusion and its implementation has been examined with the gap between policy and provision within the Irish education system. In order to gain further insight into the reality of implementing and accessing inclusive education and the collaborative Jigsaw strategy this study will thus investigate the experiences and perspectives of post-primary students, some of whom have SEN. This study will explore how a mixed ability Junior Cycle

class, reacted to the Jigsaw Strategy being implemented over a term in an Irish post-primary school.

# **Chapter Three**

### **Chapter 3: Research Methodology**

This chapter will describe the chosen research design and the methodology employed by the researcher in order to carry out the study. Details of the sampling procedure are outlined, as well as data collection and data analysis techniques used. This chapter also discusses ethical considerations and limitations to the study.

#### **3.1 Research Aims and Objectives**

The aim of this research is to investigate ‘How does a co-operative learning strategy impact on students in a post-primary school in Ireland including Special Educational Needs students?’ This will be accomplished by the following research objectives:

1. What impact does the Jigsaw strategy have on students’ self-esteem?
2. Are there any academic benefits for the students?
3. How do the students react to the strategy? Do they feel included in the class?

The researcher aims to:

1. Examine ways of looking at the students’ self-esteem and see have they experienced any success from using the Jigsaw strategy. The students will receive the Piers-Harris 2 questionnaire pre intervention. After the intervention, the students will receive the same questionnaire and the results of these findings will be analysed.
2. Look at the results from the students monthly assessments and will examine to see if the students are improving academically in addition to enhancing their self-esteem.
3. Examine if the students feel more included in class or in their group. An interview will be conducted with a few students at the end of the research in order to get their feedback. A reflective diary(Appendix 14) will be kept which will record any observations made during the intervention.

#### **3.2 Research Design**

Hancock and Algozzine (2006), state that the selection of a research design is determined by how well it allows for a full investigation of a particular research question. For the purposes of this study, a mixed methods approach will be used.

The researcher will utilise this method as the study is attempting to merge qualitative and quantitative data. Johnson and Onwugbuzie (2004) state that mixed method research is not looking for a ‘perfect solution’ (p. 16). A perfect solution is not being sought by the researcher but it is hoped that it will enable the researcher and the students to find a way of embracing the new Junior Cycle while trying to ascertain if the Jigsaw strategy, suits certain students better than others.

The researcher will use both qualitative data with some quantitative data to compile the research analysis. The qualitative data used will include teacher observation, a reflective diary, student interviews and the Piers- Harris 2 questionnaire. The quantitative research will comprise of analysing the numerical data from the monthly assessments. It will involve looking

at the results from the students' monthly assessments. The students' results will be compared and looked at for any changes in their marks, both positive and negative. A bar chart will aim to show and explain the quantitative data analysis. Triangulation will be used as the study is attempting to try to 'confirm, cross-validate or corroborate findings' (Creswell, 2003).

Campbell and Fiske (1959), first introduced the idea of triangulation, describing it as a method whereby one or more methods are used as part of the validation process. This is the reason both qualitative and quantitative data are being utilised. It is hoped that the information received from the questionnaire, teacher observation, reflective diary will be compared and analysed with the quantitative data generated from the students' monthly assessments. Triangulation does have certain limitations as outlined by Denzin (1978) when he states that no matter how the qualitative data is analysed, in reality, 'only one paradigm' is being used. (p.114). He goes even further and suggests that three outcomes arise out of triangulation:

1. Convergence
2. Inconsistency
3. Contradiction

He suggests that whichever of these outcomes appear to be to the fore, the researcher can justify and construct their argument as they have observed the participants. However, it is hoped that the advantages of using this method outweigh the disadvantages. The researcher remains confident that using both qualitative and quantitative data will help ensure that validity and reliability are achieved during the data collection stage. The merits in using triangulation are described by many experts, (Rossman and Wilson, 1985), (Creswell, 2003) and (Johnson and Onwuegbuzie, 2007). The researchers' reasons for using this method are as follows:

1. To confirm or corroborate the findings.
2. For richer data collection.
3. For validation purposes through cross-verification.
4. To provide a comprehensive and indepth analysis of the data.

The researcher used action research (Mc Niff, 2010) as the methodology for the study as the research was being conducted in the researcher's own work environment. Action research is fitting for this particular task as it is a form of collective, self-reflective inquiry that is being undertaken (Kemmis and McTaggart, 1988). Active learning is a key component of reflective practice (Devine et al, 2013). The researcher's current teaching practice was assessed and following the results of the findings, will reflect further and make relevant changes to their practice. Mc Niff (2013) states that when current practice is reviewed and an aspect for improvement has been identified, the intervention must then take place, followed by an evaluation and this cycle continues until the practitioner is happy with their work.

Action research is fitting for this project as the researcher is the practitioner and can carry out the intervention during their time at work. Mc Niff (2013), sets out an **eight- stage model** of the action research process:

1. Review your current practice.
2. Identify an aspect that you wish to improve.
3. Imagine a way forward in this.
4. Try it out.
5. Monitor and reflect on what happens.

6. Modify the plan in light of what has been found, what has happened, and continue.
7. Evaluate the modified action.
8. Continue until you are satisfied with that aspect of your work (e.g. repeat the cycle) (p.71).

With the introduction of the new Junior Cycle, the researcher has identified that the strategies being advocated by the DES need to be suitable for students of all abilities in order to achieve maximum benefits for all. The Jigsaw strategy has been utilized previously by the researcher and proved to be successful with a higher level group. The researcher, however was keen to examine if it has merits with a mixed ability group. The intervention was implemented over a specific timeframe (Appendix 7).

### **What is the Jigsaw strategy?**

It is a collaborative learning strategy which involves students being actively engaged in teaching one another. The material is broken down into smaller parts. Students are assigned a group. The students are learning from their fellow students in their 'expert' team before returning to their original team to give feedback on what they have learned. Marhamah and Mulyadi (2013) suggest that the Jigsaw strategy "allows students to work with one another and develop a sense of being needed" (p.711). As the students are preparing for their Junior Cycle, the Jigsaw strategy was used on comprehension extracts from their Junior Certificate exam papers.

For the purposes of this research, the Jigsaw strategy was broken down into 5 manageable steps as follows:

1. Create cooperative groups. The groups will be selected to ensure balance.
2. Preparation pairs. The students will be given time to discuss briefly with each other what exactly they have to do.
3. Practice pairs. The students will be given time to try to comprehend as much of their specific paragraph as they can. This time will include time for reading it individually and then time to discuss and clarify as a team. Notes copy may be consulted, if necessary. Before leaving this grouping, the student ensure they have a clear understanding of what they perceive the paragraph to be about as they will be the 'expert' in this paragraph when they return to their original group.
4. Create cooperative groups. The students return to their original group and in turn, starting with paragraph one, the 'expert' feeds back to the group their findings/understanding. A final analysis will be made. Students should have a comprehensive interpretation at this stage.
5. Evaluate. The class will be asked for feedback, including any advantages/disadvantages. This will be noted in the researcher's reflective diary.

### 3.3 Sampling Procedure

The researcher gathered qualitative data, (Piers-Harris 2 questionnaire, teacher observation and student interview) and quantitative data (examining monthly assessment results) and sought to find a result that may not be a perfect answer but nonetheless a result which will hopefully provide a full profile of a particular group of students. It is intended that the results from the data will allow for clarity and give a more richer and in-depth picture of the students' progress. All the data was scrutinized at the end of the data collection stage. The noting of data for the reflective diary was continuous however (Appendix 14). Bryman (2006), points out that there is indeed much confusion around the idea that qualitative data quantified by quantitative data is accepted as an approach. He states that this approach is invaluable for anyone embarking on social research. He found that many studies lacked a rationale for why a mixed method approach was necessary and in fact many studies he suggests utilized a mono-method. Triangulation is the researcher's rationale for using the mixed methods approach. Triangulation can be described as using two or more methods of data collection in the study of some aspect of human behaviour (Cohen et al., 2011). The researcher is using four different methods of data collection. (Questionnaire, Reflective diary, Student interview and monthly assessments analysis). There are many conflicting reasons for and against mixing both sets of data. Fielding (2012), argues that data integration is at the core of the mixed methods approach. This is something that Creswell (2003), concurs with. He suggests that the **mixed methods design** has **four main criteria**:

1. **Implementation**- The sequence of qualitative and quantitative in the overall design is important.
2. **Priority**- Which methods are given more importance? Qualitative or quantitative?
3. **Integration**- The stage at which the data from different methods are put together into relation with each other.
4. **Theoretical perspective**- Is the theory informing the analysis explicit from the beginning or emergent during the research process?

The integration of the data was done at the end of the project. The student interview was the last piece of data to be analysed. Prior to this, the students had completed their second Piers-Harris 2 questionnaire. The researcher noted any emerging themes from the data and recording any new or interesting findings.

Johnson et al., (2007) suggest that pragmatism perhaps offers the best explanation for using a mixed methods approach as it offers an 'epistemological justification' for mixing approaches and methods (p.125). A pragmatic stance is being adopted by the researcher as there is a research problem and the researcher is trying to understand how to best help both the students themselves to overcome this problem. It is intended to check if the jigsaw strategy will work as an effective tool for a mixed ability class.

### 3.4 The Sample

The group the researcher is using to carry out the research is a mixed ability third year group, comprising of 11 Junior Certificate students. Seven out of the eleven students have SEN and are receiving extra supports in literacy and/or numeracy. One student is awaiting a psychological assessment but due to cutbacks and demands on the educational psychologist will not be seen until the next school term at the earliest. An SNA is assigned to the class, however, she works with two particular students in the class. One of the students has an Irish exemption and therefore the SNA is not able to be in Irish class at this time. The students are taught 5 times per week for 40 minutes per session, with one double session on a Monday. This group was selected as the researcher tried the Jigsaw co-operative learning strategy with a large higher level group for the student-centred module as part of their Master of Arts in Learning and Teaching (MALT) course. The researcher is keen to see if this strategy works with a mixed ability lower level group, as it yielded positive results with the higher level group. These students are given monthly assessments in all subject areas at the end of each calendar month.

All 11 of the participants are part of the Junior Certificate Schools Programme (JCSP).

#### What is JCSP?

It is a national programme sponsored by the DES and the NCCA. It originated in the early school leavers' programme. It is a **social inclusion programme** aimed at:

- Students who are identified as being *at risk* of being socially or academically isolated.
- Students who are at risk of early school leaving before the Junior Certificate has been achieved.

It attempts to help young people experience success and develop a positive self-image by 'providing a curriculum and assessment framework suitable to their needs' (JCSP, 2005).

Basically, JCSP students are doing the regular Junior Certificate/Cycle but they are experiencing continued success along the way. The JCSP students have celebrations at Christmas and at the end of the school year. Individual teachers acknowledge their successes and they are awarded certificates and statements. JCSP students partake in many initiatives throughout the school year, such as literacy and numeracy initiatives as well as various social trips. At the end of their 3rd year, JCSP students are awarded a profile. The profile contains a breakdown of all their achievements and statements over the three years as well as a reference from the Principal.

### 3.5 Why use the Piers- Harris 2 Self-Concept Scale?

The Piers- Harris Children's Self-Concept Scale was originally developed in the 1960's to provide a brief, self-report instrument. Since its introduction, the Piers-Harris has enjoyed 'widespread acceptance' among clinicians and researchers as well as praise from reviewers (Piers and Herzberg, 2002, p.3). The Piers- Harris has been used previously on 'at-risk' students. This had an influence on the researchers decision to use this questionnaire as well as advice from the school's educational psychologist. As all the students in the group are JCSP students, who are often students who are at risk, it was thought that this would be the most suitable. Haselden et al (2012), discuss how 'at risk' students often believe they will not succeed, regardless of their efforts. It is vital that this research is carefully monitored at all stages of the intervention. The students' progress and attitudes will be noted in the researcher's reflective diary.



The researcher will administer the Piers-Harris 2, Self-Concept Scale on the students prior to using the Jigsaw co-operative learning strategy and will re-administer it post intervention.

The Piers-Harris 2 was chosen for the following reasons:

- It is suitable for the age group the researcher is working with.
- It was recommended by the school's educational psychologist.
- The scale provides an overall view of an individual's self-perception, including how they perceive themselves academically.
- The Piers-Harris 2 has been previously used on 'at risk' students.

The researcher is cognizant of helping the JCSP experience a positive self-image and to ensure they are encouraged at all times. With the schools' educational psychologist affirming that the test was suitable for checking students' self-esteem, the researcher was confident to administer this particular questionnaire to the students.

### **3.6 Data Collection Methods**

#### **Questionnaire: Research Objective 1**

##### **What is the Piers-Harris 2 Questionnaire?**

The Piers-Harris is a 60 item self-report questionnaire. It is designed to be administered to children who are at least 7 years old and upto the age of 18 years old. The Piers-Harris 2 items are statements that express how people may feel about themselves. Respondents are asked to indicate whether each statement applies to them by choosing yes or no (Appendix 9). Most respondents take 10 to 15 minutes to complete the questionnaire. The primary purpose of the Piers-Harris 2 is to provide a quantitative research instrument to evaluate alternative intervention strategies and as an individual or group screening device which helps to identify individual that may be in need of more in depth psychological evaluation. The Piers-Harris 2 also includes two scales which are sensitive to validity concerns and that access the validity of the responses: Inconsistent Responding (INC) and Response Bias (RES).

There are **six** domain scales which are as follows:

- 1. Behavioural Adjustment (BEH)**
- 2. Intellectual and School Status (INT)**
3. Physical Appearance and Attributes (PHY)
4. Freedom from Anxiety (FRE)
5. Popularity (POP)
6. Happiness and Satisfaction (HAP)

For the purposes of this study and in consultation with an educational psychologist, it was decided to only examine domains one and two which considers school life (INT) and self-esteem (BEH). In total 30 out of the 60 questions will be used by the researcher.

The questions are as follows and numbered according to their order in the questionnaire. BEH contains the following 14 questions: Self-Esteem: Behavioural Adjustment

- 12. I am well behaved in school.
- 13. It is usually my fault when something goes wrong.
- 14. I cause trouble to my family.
- 18. I am good in my schoolwork.
- 19. I do many bad things.
- 20. I behave badly at home.
- 27. I often get into trouble.
- 30. My parents expect too much of me.
- 36. I hate school.
- 38. I am often mean to other people.
- 45. I get into a lot of fights.
- 48. My family is disappointed in me.
- 58. I think bad thoughts.
- 60. I am a good person.

There are **16** questions pertaining to intellectual and school status (INT) that are as follows and in the order they appeared in the questionnaire:

- 5. I am smart.
- 7. I get nervous when the teacher calls on me.
- 12. I am well behaved in school.
- 16. I am an important member of my family.
- 18. I am good at my schoolwork.
- 21. I am slow at finishing my schoolwork.
- 22. I am an important member of my class.
- 24. I can give a good report in front of the class.
- 25. In school I am a dreamer.
- 26. My friends like my ideas.
- 34. I often volunteer in school.
- 39. My classmates in school think I have good ideas.
- 43. I am dumb at most things.
- 50. When I grow up I will be an important person.
- 52. I often forget what I learn.
- 55. I am a good reader.

The students are not aware of the six domains. All the questions from each domain are mixed together in this questionnaire.

### **Monthly Assessment: Research Objective 2.**

Each month the students must complete monthly assessments in all subject areas, in line with school policy. The researcher will be solely analysing the results the students have received in the Irish language class. The students' results are recorded each month on a specific page in their student diary, so can be easily traced. The analysis will examine results over a three month period, February, March and April. February will be the baseline results, pre-intervention. Any changes will be recorded in the researcher's reflective diary (Appendix 14). The results will be

displayed in a bar chart at the end so the changes can be easily identified. Each student was given a number ranging from one to eleven to maintain anonymity.

### **The Interview: Research Objective 3.**

Post intervention, the researcher interviewed a few of the students. The semi-structured interview lasted approximately 30 minutes. A number of mainly open-ended questions were asked by the researcher (Appendix 6). Personal insight is important for this research as the researcher is trying to get the student's perspective and thoughts on the new Jigsaw intervention. A semi-structured interview was selected by the researcher as it was thought to allow more freedom with conversation, for both the interviewer and the interviewee, yet still allow for comparability when analysing the data. Dexter (1970), cited in Bell, 2010, states that an interview is a conversation with a particular purpose. The students selected for interview will be students that were observed to have engaged and a student who did not engage with the intervention but was willing to participate in an interview. Students had consented prior to any interview taking place. The students had an opportunity to view their statements and their comments were double-checked to avoid any misunderstandings that may have occurred. Clarity is very important to ensure an accurate analysis of the findings.

The results were looked at thematically. The data received during the interviews was examined for any emerging themes. As the researcher was interviewing their own students, they are mindful of bias. The students clarified what exactly they meant by specific comments. A conscious effort was made to be consistent when generating codes and interpreting during the analysing of the data. The interpretation phase was done at the end. After interview, the interview will be transcribed. Similarities and/or differences between the interviews were noted. An inductive approach was used to analyse the data. This method was used by the researcher as inductive teaching and learning methods include inquiry learning, problem-based learning and learning and discovery learning. (Prince and Felder as cited by Brehovsky and Emanovsky, 2011). This study involves learning and discovery as the researcher aims to find a solution to a problem. Inductive teaching gives the learner 'greater responsibility' for their learning (Mallia, 2014, p.222). The aim of the new Junior Cycle is to essentially give learners more responsibility and control of their own work

### **3.7 Ethical Considerations**

Ethics is by its nature "bound up with individual decision", (R. Small, 2001, p.3). Ethics should always be to the fore, especially when human participants are involved. This project has the following ethical considerations:

1. All participants must remain anonymous.
2. All participants must have parental consent prior to commencing any research as they are under the age of 18 years.
3. All participants must give their own consent as well.
4. All data given is strictly confidential.
5. All data will be securely stored and shared only with supervisor, Anne Burke.
6. Interviewees will be given a chance to verify their statements.

The researcher adhered to the school's code of practice. The Principal has consented to the project taking place in school (Appendix 1). Ethical approval has been received for the project from Letterkenny Institute of Technology (LYIT) ethics committee with some minor

modifications. The relevant amendments were made and the supervisor has confirmed that she is happy with the changes. All consent was voluntary and informed. The study commenced after the February mid-term break when the researcher received both parental and student consent. Parents and students received an information sheet and consent form (Appendix 2-5). No student was excluded from the lesson and all students and parents consented to participation in the study. All students had a choice and all activities were fully explained to them beforehand.

For a school-based research project, Cohen et al, (2011) state that if possible the research report should be of benefit to the school and the participants. The researcher gathered the data and will use the results to enhance students' experience and if possible to relay the findings to the staff while maintaining the students anonymity. Protecting individual autonomy is extremely important, "particularly research involving human participants" (Howe and Moses, 1999 p.22).

The research site is in a Delivering Equality of Opportunity In Schools (DEIS) school and the researcher has experience in working with students of varying abilities.

The data was kept securely and was only shared with the supervisor as necessary. The data was stored on a secure computer drive which only the researcher has access to. In compliance with Data Protection requirements, the data was used only for the purpose for which it has been collected and was disclosed in an anonymised format. All data was collected, processed and stored in compliance with relevant data protection legislation and in compliance with LYIT's Guidelines for Electronic Storage.

### **3.8 Data Analysis**

The data from the questionnaires was analysed by colour coding the responses. The researcher concurs with Maguire and Delahunt (2017) that analysing data 'can present challenges, not least for inexperienced researchers' (p.23). The task of analysing the data is a key stage in the study. All students were given a number, ranging from one to eleven. The Piers-Harris 2 manual was used to assess the results from two out of the six domains in the questionnaire. The areas being analysed are self-esteem (BEH) and school-life (INT). The educational psychologist was consulted to ensure the results are valid and reliable and that the manual has been used correctly by the researcher. The results from these two sections were recorded and changes were noted and put into a graph to clearly show areas of key changes and/or similarities.

The results from the monthly assessments were scrutinised and compared with their February baseline results. Any changes were highlighted in the teacher's diary and results were displayed in a bar chart at the end of the intervention period making any changes easily identifiable.

The data from the individual interviews was read and re-read. Interviews were recorded, typed up and any queries/ affirmations were sought from the students to help ensure validity was maintained. The researcher used Braun and Clarke's six-phase guide as a framework for analysing the data. Braun and Clarke, (2006) suggest the following steps as a suitable means for examining data:

1. Become familiar with the data.
2. Generate codes.
3. Search for themes.
4. Review themes.

5. Define themes.
6. Write it up.

The researcher used these six steps as a guide when analysing the interview data.

The teacher's reflective diary was used to gauge how the students were responding to the intervention. Their comments and attitudes will be noted and will be referred to in the next chapter.

The main findings of the study under each of the four areas of data will be presented in chapter four and discussed further in chapter five, in line with the literature review.

### **3.9 Limitations**

Due to the small scale of this study, it cannot be assumed that the findings are representative of the experience of all students. The small sample size,  $n=11$  and the restrictive timeframe limit this study considerably. The researcher is aware that only one subject area was examined over a limited period of time. A Whole-School Evaluation-Management, Leadership and Learning (WSE- MLL) occurred in the middle of the intervention and this may have had an impact on students' behaviour and results as they knew inspectors could be in their classes and looking at their work and their student diary.

### **3.10 Conclusion**

This chapter has detailed the chosen research design and provided justification for the methods employed by the researcher in order to carry out this study. The sampling procedure and data collection and analysis techniques were discussed and the reasons for their use was rationalised. A gap has been identified in the area of collaborative learning strategies and SEN. While there is vast amounts of literature around the area of collaborative learning and SEN separately, there is very little literature in the area of both combined. The researcher provided an ethical framework and has acknowledged the limitations of the study. The following chapter will present the findings from the group and individual interviews in more detail.

# **Chapter Four**

## **Introduction**

This chapter outlines the predominant findings that emerged from the data analysis of the Piers-Harris 2 questionnaire, the students' monthly assessments, the student interview and the teacher's reflective diary. The entire group of eleven students participated in the questionnaire and monthly assessments. However, only two students took part in the student interview at the end of the intervention. Each student was given a number to protect their identity. The same number was used for each of the data collection methods.

## **4.1 Descriptive Analysis of the Results**

### **4.2 Research Objective One- What impact does the Jigsaw strategy have on students' self-esteem?**

The Piers- Harris 2 Children's Self Concept Scale was the test tool used to examine self-esteem. Since self-esteem is an abstract concept, it is difficult to measure. It can however, be measured by a person's behaviour which is observable. Self-esteem issues were also noted in the researcher's reflective diary (Appendix 14). However, most self-esteem measures are assessed through self-report.

All eleven students participated and completed the pre and post intervention questionnaire. The first questionnaire was administered in February, prior to the Jigsaw strategy commencing. Student and parental consent had already been received before administration. For the Piers-Harris 2 to be valid and reliable, it is important that the students have a good rapport with the administrator. The researcher in this instance was their teacher but was also their JCSP co-ordinator. The JCSP co-ordinator organises extra literacy and numeracy initiatives for the students as well as many social trips throughout the school year. A definite rapport was existent between the researcher and participants. The researcher is mindful of bias and endeavoured to be as objective as possible.

Students answered 60 questions by circling yes or no (Appendix 9). For the purposes of this research only 30 of the 60 questions were used. The questions used by the researcher were divided into two categories.

1. Behavioural Adjustment (BEH).
2. Intellectual and School Status (INT).

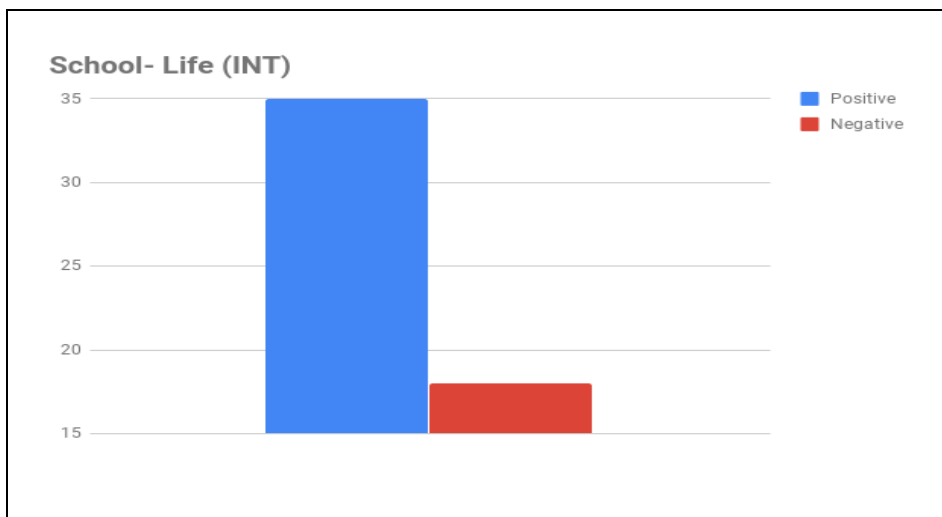
The behavioural adjustment (BEH) section contains 14 questions in no particular order that are mixed in with questions from other sections. These questions are questions relating to the students' self-esteem. There were 16 questions relating to school-life.

The instructions were clearly given to the students and the students were evenly spaced out to maintain their privacy. Once the students had briefly read through the questions, a particular student asked, "*Do we have to write our name on this?*" This was recorded in the researcher's diary. (Appendix 14). The researcher gave assurances that they didn't and the student appeared content to fill it out afterwards. This is consistent with much of the literature in chapter two.

Students, especially students with SEN need very specific instructions and need to feel at ease with their environment (Dallat, 2009 and Sowell, 2017).

### School-life Analysis

Overall the questionnaire showed a positive outcome for many students. Appendix 8 outlines all of the responses recorded by the students and the changes between pre and post intervention responses. The data was deemed positive if the response received post intervention was seen as a positive change for the student. Many students improved on their original score with 35 positive changes overall recorded between the students' pre and post intervention responses in the area of school-life. 18 negative responses were received in the area of school-life post intervention. Figure 1.1 below shows a breakdown of positive and negative changes recorded by the researcher.



**Figure 1.1 School-Life Analysis Bar-chart**

Figure 1.1 shows positive changes in the blue column. Negative changes are recorded in red. Across the Y axis, the number of changes overall are recorded.

The above data shows that post intervention, there were 35 positive changes in the responses from the students compared to the data received pre intervention. 18 negative changes were noted post intervention.

Overall, 10 out of the 11 students recorded positive changes to their school-life according to the data recorded in the responses received by the researcher. Two students recorded eight positive changes to their school-life. Another student recorded seven positive changes to their school-life. Two out of the eleven students responded that they now no longer forget what they learn. This was asked in question **52. *I forget what I learn.*** Their answer changed from Yes to No.



There are **16** questions pertaining to intellectual and school status (INT) that are as follows and in the order they appeared in the questionnaire:

- 5. I am smart.
- 7. I get nervous when the teacher calls on me.
- 12. I am well behaved in school.**
- 16. I am an important member of my family.
- 18. I am good at my schoolwork.**
- 21. I am slow at finishing my schoolwork.
- 22. I am an important member of my class.
- 24. I can give a good report in front of the class.
- 25. In school I am a dreamer.
- 26. My friends like my ideas.
- 34. I often volunteer in school.
- 39. My classmates in school think I have good ideas.
- 43. I am dumb at most things.
- 50. When I grow up I will be an important person.
- 52. I often forget what I learn.
- 55. I am a good reader.

**INT- Intellectual and school status.** This domain contains 16 items. It reflects a student's assessment of his/her abilities with respect to intellectual or academic tasks. The item most strongly correlated with the score is item number five, "I am smart".

Two questions are in both categories, numbers 12 and 18.

*12. I am well behaved in school.*

*18. I am good at my schoolwork.*

### **Student Self- Esteem**

There are 14 questions in total under the category for self-esteem.

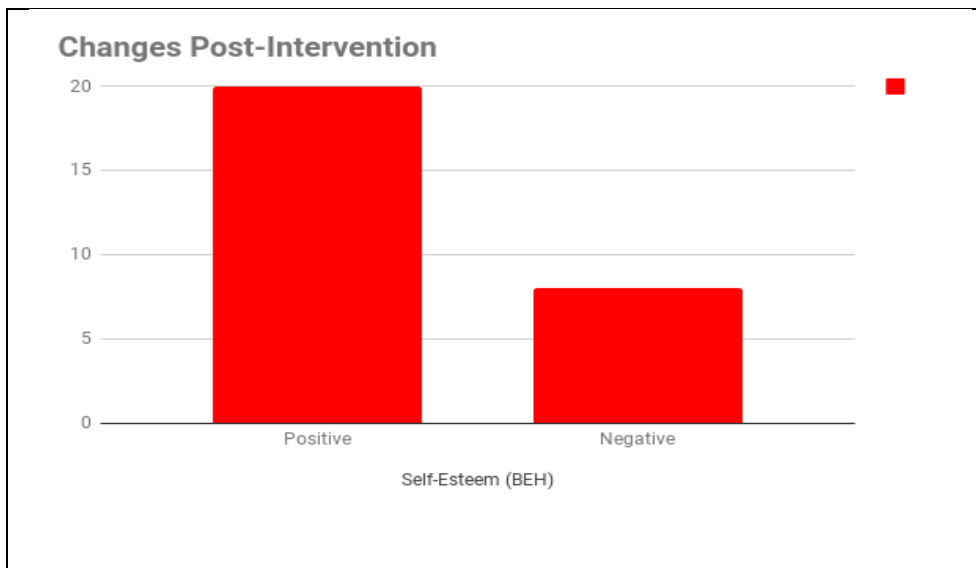
The questions are as follows and numbered according to their order in the questionnaire.

BEH contains the following 14 questions: Self- Esteem: Behavioural Adjustment

- 12. I am well behaved in school.
- 13. It is usually my fault when something goes wrong.
- 14. I cause trouble to my family.
- 18. I am good in my schoolwork.
- 19. *I do many bad things.*
- 20. I behave badly at home.
- 27. I often get into trouble.
- 30. My parents expect too much of me.
- 36. I hate school.
- 38. I am often mean to other people.
- 45. I get into a lot of fights.
- 48. My family is disappointed in me.
- 58. I think bad thoughts.
- 60. I am a good person.

**BEH- Behavioural Adjustment.** The 14 item BEH scale measures admission or denial of problematic behaviours. The item most strongly correlated with BEH score is item number nineteen. “I do many bad things”.

**Student Self-Esteem (BEH)**



**Figure 1.2 Student Self-Esteem bar-chart.**

Figure 1.2 shows that post-intervention, there were 20 positive changes in the responses from the students compared to the data received pre-intervention.

8 negative changes were noted post-intervention. Positive changes are recorded in the left-hand column in red and negative changes are recorded in red also in the right hand column.

Many positive changes were recorded by the researcher. The biggest change was recorded by student number six with eight positive changes to their self-esteem.

The **eight** positive changes were as follows:

1. In am well behaved in school. No to Yes. (12)
2. I cause trouble to my family. Yes to No. (14)
3. I do many bad things. Yes to No. (19)
4. I behave badly at home. Yes to No.(20)
5. My parents expect too much of me. Yes to No.(30)
6. I am often mean to other people. Yes to No.(38)
7. My family is disappointed in me. Yes to No.(48)
8. I think bad thoughts. Yes to No. (58)

Two students recorded no change to their self-esteem, two students recorded negative changes to their self-esteem. Student number four had the highest number of negative changes and they were as follows:

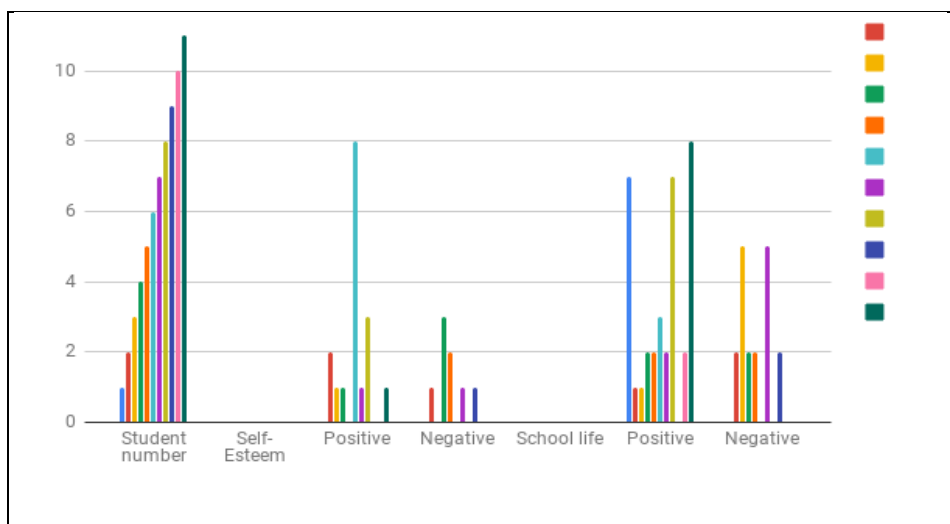
1. I am well behaved in school. Yes to No.
2. It is usually my fault when something goes wrong. No to Yes.
3. I often get into trouble. No to Yes.

Three negative changes were noted by the researcher for this student. However, notable, the one positive change recorded under the self-esteem category was the following question;

One positive change recorded by this student was as follows:

**Question number 36: I hate school.** The response changes from Yes to No.

Overall, there were many positive changes for the students as shown in the graph below:



**Figure 1.3 Overall student responses to BEH and INT**

Figure 1.3 shows the student responses gathered from both the self-esteem and school-life data combined. Overall, you can clearly identify that there were more positive changes post-intervention than pre-intervention. It is clear from the data shown on the x axis that the positive outcomes for the students' were greater than the negative outcomes.

### 4.3 Research Objective Two- Are there any academic benefits for the students?

All students participated in the monthly assessments. The February results were used as their baseline data number and other results for March and April were compared with these results. The results recorded by the researcher were as follows:

Student Number	February	March	April
1	45%	48%	55%
2	32%	15%	50%
3	43%	58%	66%
4	74%	70%	78%
5	50%	42%	64%
6	45%	48%	71%
7	55%	43%	66%
8	32%	35%	40%
9	55%	58%	62%
10	58%	60%	64%
11	63%	66%	74%

**Figure 1.4 Monthly Assessment Data**

#### Student Monthly Assessment Results.

The above figure 1.4 shows that in February, prior to the Jigsaw strategy being implemented, two out of the eleven students had failed their monthly assessments in Irish. Both students received 32% in their February test. In March the same two students failed their monthly test again. Student number two got 15% in their March assessment. This was quite a sizeable decrease in their result. Student number eight, increased slightly to get 35%.

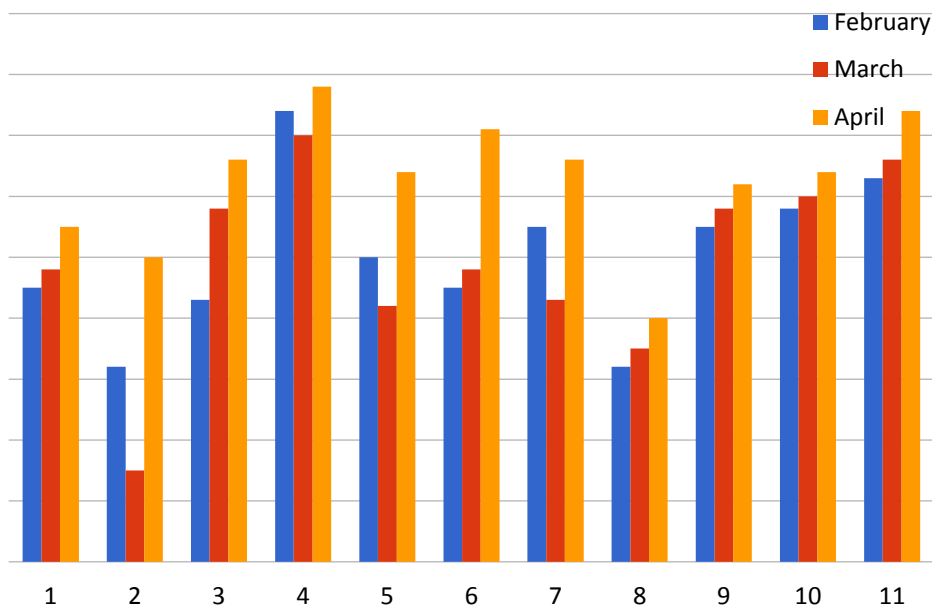
By the end of the intervention, at the end of April, significantly all students had passed, getting above 40%.

Student Number	February	March	April
1	45%	48%	55%
2	32%	15%	50%
3	43%	58%	66%
4	74%	70%	78%
5	50%	42%	64%
6	45%	48%	71%
7	55%	43%	66%
8	32%	35%	40%
9	55%	58%	62%
10	58%	60%	64%
11	63%	66%	74%

### Figure 1.5 Changes to Assessment Results

The highest result recorded was 78% by student number four. Although, it is worth noting that this student achieved 74% prior to the intervention taking place.

The largest increase was recorded by student number six, increasing from 45% to 71%.



**Figure 1.6: Bar chart of student monthly assessments results.**

The figure above shows each student represented by a number along the x axis. Each of the months are colour-coded.

- February (Blue)
- March (Red)
- April (Yellow)

The data clearly shows that seven students increased each month, with the exception of student number two, four, five and seven who went down in marks for the month of March but increased their score to gain a pass in their April assessment. The majority of students made gradual progress each month.

#### **4.4 Research Objective Three- How do the students react to the strategy? Do they feel included in class?**

Two student interviews took place post intervention. The students were interviewed separately and their responses were read back to them and their comments were confirmed before any analysis began. For the purposes of the study. Students were titled, **Student A and Student B** in an attempt to protect their anonymity. The full interviews lasted approximately thirty minutes (Appendix 15).

From the outset, it was clear the results were positive.

**Question one:** Did you enjoy the Jigsaw strategy?

Student A and B both enjoyed the strategy.

When the students were asked what did they enjoy most? Both student replied as follows:

**Student A:** “ *I enjoyed working in a group and in pairs*”.

**Student B:** “ *I liked working in groups and chatting*”.

When the students were asked ‘What did you least enjoy?’, both students claimed they enjoyed it all.

**Student A:** “I enjoyed all of it”.

**Student B:** “Nothing, I liked all of it”.

When asked question six, ‘Did you see an improvement in your monthly test results?’

**Student A replied:** “ I remembered more”.

**Student B replied:** “Yes, I remembered things better writing on the whiteboards”.

When asked why did they think that was, interestingly they replied as follows:

Student A: “ I don’t know”.

Student B: “It was **far better** than writing things down”.

Question eight asked the students: ‘What recommendations would you like to make for future lessons?’, they responded as follows:

**Student A:** “ None, I would do it again.”

**Student B;** “I don’t have any”.

Neither student had any recommendations or thoughts on how they could change the strategy.

Question nine asked ‘ Did you feel included in the group?’

Both students claimed they felt included.

Question ten: ‘Did you feel comfortable in the group you were in?’

Both students said they felt comfortable in their assigned groups.

Question eleven asked: ‘Would you rather work by yourself?’

**Student A replied:** “ No, because you take in more from others in the group”.

**Student B replied:** “ No, I would rather work with someone because you can help each other out”.

Question twelve: ‘Have you anything else you would like to add about the Jigsaw strategy?’

**Student A:** “No”.

**Student B:** “No, I just enjoyed it”.

#### 4.5 Reflective Diary Analysis

A reflective diary was kept by the researcher for the duration of the intervention (Appendix 14). All students were willing participants and keen to try out something new. A positive outlook was evident from the students from before the start of the intervention. The students were given clear instructions and were shown a video prior to commencing the Jigsaw strategy. This concurs with Dallat (2009), when he states that a student must feel safe and comfortable in order for any deeper learning to take place. Most students needed reassurance that they would not be assessed on the strategy and that the researcher would be walking around the room to answer any questions or concerns they had. Prior to the intervention taking place, a student with SEN asked: “*Do I have to speak in front of the class?*” and “*Is this going to be recorded?*”. The researcher asked the student why they would think this and they replied: “*Like the CBA’s*”. This student had a genuine fear about being recorded and lacked the confidence to talk in front of their peers. Another student wanted to know if the strategy would involve any extra work. Mengduo and Xiaoling, (2010) suggest that the Jigsaw strategy can reduce students’ reluctance to participate. Learners generally became engaged after being put at ease and observing others. This was the researcher’s experience with this particular group of JCSP students. Janseen and Wubbels, 2018 recognised that there are four main obstacles to effective collaboration:

1. Lack of Collaborative skills
2. Free-riding
3. Competence status
4. Friendship

During this study the researcher experienced all four of these challenges. Some of which are noted in the reflective diary. The students lacked the skills needed to initially understand what they were tasked with doing (competence status). Some students liked to observe what was going on, while a few merely sat back and let another student from the group do the majority of the work (free riding). The friendship challenge was recorded by the researcher when a student wanted to be in the same group as their friend and did very little work for the remainder of the class.

The researcher observed that some students were struggling to write answers into their copy. One student in particular who is awaiting a psychological assessment and another student who shares access to an SNA were finding it difficult to keep up. The researcher offered them mini whiteboards and/or coloured yellow card. The students were told a summary would suffice. All students in the class availed of the mini whiteboards and one student told the researcher: “I remember things better” when they use the whiteboards. The researcher decided to tweak the Jigsaw strategy at this stage as it was of paramount importance that all students felt engaged and comfortable. This concurs with Williams, 2012 when he states that students must not be allowed to become ‘passengers’ in the education system. The findings of the study agree with what Florian, 2013 states when she suggests that teachers often use strategies matched to their own class/group.

#### 4.6 Discussion of findings on self-esteem

The Jigsaw strategy overall appeared to have a positive impact on the 11 JCSP students' self-esteem. However, some other factors should be considered when examining the overall picture.

- A WSE-MLL took place in the middle of the intervention. Students voiced their concerns to the researcher prior to the inspectors arriving in the school. The inspector did come into the JCSP students' class and they did very well. It was a different subject to the researcher's, however, their confidence and pride was evident as they relayed their praise and efforts to various teachers.
- The researcher had almost completed the course by the time the students received their post intervention questionnaire. Therefore, this may have impacted on their confidence as they had been more confident in answering exam questions.
- Irish Oral exams took place in March. Students were noticeably nervous but all students had succeeded.
- The Junior Certificate was getting closer and therefore some students may have been getting more anxious at the time of the post intervention questionnaire.
- The students had a lot of their practical exams in subjects like Metalwork, Woodwork and Home Economics around the time of re-administration of the questionnaire.

The students answered 14 questions overall and the responses to all their questions that changed is recorded in appendix eight.

Student number six recorded eight positive changes to their self-esteem. This student also recorded the highest changes to their monthly assessment results. This student really embraced the Jigsaw strategy and many positive changes were evident in their confidence.

Student number four recorded the highest number of negative changes to their self-esteem. Three negative changes were recorded (Appendix 8). Interestingly though however, the one positive change this student had was:

Item number 36: **I hate school: The response went from Yes to No.**

This student, number four recorded consistently high marks in their monthly assessments. From observation, the researcher suggests that the student was feeling anxious due to upcoming exams and perhaps placing pressure on themselves to do even better.

Student number two is awaiting a psychological assessment, their results were as follows:  
Self-Esteem- Three changes in total.

- 13. It is usually my fault when something goes wrong. No to Yes*
- 14. I cause trouble to my family. Yes to No*
- 18. I am good at my schoolwork. No to Yes*

Two out of the three changes were positive.

The change in item number 18, I am good at my schoolwork, No to Yes, is noteworthy. Sabbah (2016), suggests that the Jigsaw strategy ' reinforces positive interdependence and



accountability’ (p.44). The results from these findings would suggest that this student’s positivity has certainly been enhanced and they appear more comfortable and confident with their schoolwork.

#### **4.7 Discussion of findings on academic benefits**

The Jigsaw strategy appeared to have an overall positive result for the JCSP students. Although some students did not have an increase in their marks for the month of March, perhaps their Irish Oral preparation impacted on their results. Students were busy focusing on their exam which was worth 40% of their overall Junior Certificate result in Irish. All students passed their April monthly assessment. Some students had very positive outcomes. Student number six had the biggest success in their monthly assessment, going from 45% in February to 71% in April equating to a 58% increase in their monthly assessment. The Jigsaw strategy had many benefits for the students. This is often emphasized in the literature. Ralston et al, 2017, discusses the merits of the strategy as a formative assessment tool. The teacher could quickly identify any ‘gaps’ in learning. This was true for this study also. The researcher could quickly identify if there were any ‘gaps’ in knowledge as they went around the room. From the evidence of this study, the researcher concurs with Ralston et al, 2017. This study showed that students became engaged and active and had academic benefits from using the strategy.

#### **4.8 Discussion of findings on inclusion**

From the findings of this study, the two students interviewed said they felt included in the strategy. However, some of the findings from the researcher’s reflective diary may suggest that not everyone felt included all the time. One student was not happy that they could not sit beside their friend during the strategy as the researcher had assigned specific seats for each group. This student did not engage fully with the strategy for the duration of this lesson. This links in with recent research by Janseen and Wubbels, 2018 when they state that friendship is one of four obstacles to successful collaboration.

During the interview when student B was asked: ‘Would you rather work by yourself?’, the reply was: “*No, I would rather work with someone because you can help each other*”. This is similar to what Sabbah, 2016 and Amador and Mederer, 2013 stated when they suggest that the Jigsaw strategy helps to foster negotiation skills and individual accountability.

#### **4.9 Summary of findings**

The results discussed above indicate that with this group of JCSP students, the majority had a positive outcome from the study. It was found that many students experienced positive changes to their self-esteem and school-life/work. Results from the student interviews suggest that by using the Jigsaw strategy students felt included and comfortable in their group. Some of the students would appear to have developed enhanced resilience, which would undeniably have a positive impact on their self-esteem. Some of the evidence from the researcher’s diary, would suggest that not everyone felt the same. This chapter examined the aim and objectives of this study and analysed the findings. The following chapter will look at conclusions and explore recommendations.

# Chapter Five

## **Introduction**

This study set out to explore the area of collaborative learning and examine the Jigsaw strategy in particular in detail. It sought to investigate if the Jigsaw strategy was effective when used with a mixed ability group, some whom have SEN. It looked at the area of inclusion in Ireland, the policies surrounding it and the impact recent changes may have had on particular students. Following analysis and discussion of the findings, the final conclusions and recommendations will now be presented.

### **5.1 Conclusions outlined**

The main objectives of this study was to examine the Jigsaw strategy and what impact it had on a small group of JCSP students. The study aimed to investigate if the Jigsaw strategy had any impact on the students' self-esteem. It aimed to look at their monthly assessments and look at any academic benefits the students may have had from using the Jigsaw strategy. It also looked at some of the students' own personal experiences of the strategy and gained an insight into their own personal thoughts and feelings on it as a co-operative learning strategy.

### **5.2 Shortcomings of the study**

A shortcoming of the study is the small sample size and the fact that only one school from a small particular group undoubtedly limits the study. It therefore cannot be thought to be representative of all schools in Ireland. The research site was a mixed, rural DEIS school in Donegal. To gain a more expansive representative sample, a diverse mix of schools would need to be used. A broader range of subjects would have helped diversify the outcome also.

### **5.3 Application of this study**

This study adds to the substantial volume of research carried out in the area of co-operative learning strategies. This paper provides an insight from an Irish perspective. There is indeed much literature available on co-operative learning strategies and on SEN and Inclusion separately. Very little literature is available in the area of Inclusion, SEN and co-operative learning strategies in Ireland. This study would be applicable to all educators, students, researchers and indeed the Department of Education and Skills.

### **5.4 Researcher's Reflective Insight**

The researcher on the whole was happy with the outcome of this study. Students appeared to have positive outcomes from using the Jigsaw strategy. However, many areas have caused the researcher concern which are outlined in the recommendations below. The students will be receiving their Junior Certificate results in September 2018 and the researcher is interested in finding out their results to see if the strategy may have had an impact on them. It took a huge amount of preparation for the strategy and with a heavy workload and curriculum the researcher would have concerns about utilizing this strategy on a more permanent basis.

If the researcher did not have a double class period, it may not have been possible to carry out the Jigsaw strategy. There are definite areas with very little literature. The researcher accepts that the Junior Cycle is relatively new at this stage but this is still a definite gap in the literature with regards students with SEN and Inclusion for the new Junior Cycle. It is not enough to have legislation, the educators need to be fully trained in order to support these vulnerable and 'at risk' students.

## 5.5 Recommendations

- The current system of SNA allocation although it has been reviewed recently, it needs to be rigorously assessed. Sharing SNA hours among students is not acceptable. It is undoubtedly having an impact on those who need it most. Even in this small scale study, an SNA was shared between two students. These students were in two different classes at the time the researcher had them for class. Therefore in liaison with the SEN co-ordinator, a decision had to be made as to which student had a greater need at that time.
- CPD for SNA needs to be urgently looked at, particularly with the introduction of the CBA's in Junior Cycle. All SNA need clarity and training and how they can best help their SEN student. According to a recent survey cited in the literature review, 60% of respondents have had little or no CPD.
- Although students with SEN are recognised more now, unfortunately the comments from The Cromien Report still ring true when it stated that the Department of Education in terms of its dealing with Special Education had 'neither the expertise nor the resources to meet the emerging demands of the system' (DES, 2000, p.24). The Minister for Education and Skills acknowledges the ever increasing numbers of students with SEN into Irish schools and has sanctioned more SNA for the next school year but it is not enough.
- Teachers need CPD for these new strategies being endorsed by the Junior Cycle. If the researcher had not been doing this research, the only information on this strategy would have been minimal information received at Junior Cycle training and the option of watching an online video on the JCT website to find out how to carry out the Jigsaw strategy. Some schools are involved in Instructional Leadership (IL) where they receive training on it. There are a limited number of spaces on these courses with a maximum of three teachers per year permitted to attend per school.
- The EPSEN report from 2004 as stated in the literature review is still not fully enacted. Mc Donnell, 2003 and Kinsella and Senior, 2008 believe that introducing legislation in isolation is not enough. This is unlikely to address the heart of the problem and will have minimal impact. All students who need a psychological assessment should be able to get one within a reasonable timeframe. The New Allocation Model in Appendix 13 eases the burden a little for some students insofar as they no longer need a diagnosis to get support. However, an assessment is still needed by other students who may just not need supports in literacy or numeracy.

- The CBA's really need to be examined. The findings of this study suggest that they put students with SEN under extreme pressure. It was noted that some students would choose not to come to school on the day of their CBA. The reflective diary also noted that students were anxious about the Jigsaw strategy when it was first introduced and they wanted to know if they would be recorded, like the CBA's.
- Inclusive practice is something which many teachers find difficult to carry out. Brennan, 2017 found that areas for improvement in teaching and learning were: Time constraints and lack of CPD for teachers re inclusive practice. The findings of this study would corroborate with these findings.
- The new Junior Cycle has some merits, students embraced the co-operative strategy in this study. However, more scrutiny is needed in how students with SEN can access it and what training needs to be put in place for teachers and SNA.

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## **Appendices**

## Appendix 1

Dear [REDACTED],

As part of the Master of Arts in Teaching and Learning (MALT), in Letterkenny Institute of Technology, I must complete a thesis. I would like to carry out my research on a class I am currently teaching. The title of my research is **'How does a co-operative learning strategy impact on students in a post-primary setting?'**

I would like to look at how a strategy such as the jigsaw strategy has an impact on these students and examine whether it has helped to improve their self-esteem and does it help them to engage more in the classroom.

Each student will receive a questionnaire pre and post intervention and a few students will be interviewed at the end of the intervention, in order to get the students' perspective of the intervention and to assess whether they thought it was successful or not.

I will be getting parental and student consent prior to carrying out any research. They will also receive an information leaflet.

If you have any questions, please do not hesitate to ask.

If you are happy to consent to me carrying out the research in the school, please sign below.

Thanking you,

---

Marisa Simms.

-----  
-----  
I consent to Marisa Simms carrying out research with the students in [REDACTED]

[REDACTED] (PRINCIPAL)

## Appendix 2

### Parental Information Sheet

#### Project Title:

‘How does a co-operative learning strategy impact on students in a post primary setting?’

**Principal Investigator:** Marisa Simms

#### **Aim of the Research:**

As part of the Master of Arts in Teaching and Learning (MALT), in Letterkenny Institute of Technology, I would like to carry out research on a class I am currently teaching, class ■■■ and ■■■ Irish class.

I would like to look at how a strategy such as the **Jigsaw strategy** has an impact on the students and examine whether it has helped to improve their self-esteem and does it help them to engage more in the classroom.

These strategies are being endorsed by the new Junior Cycle. You can get more information on this via the following link. [https://www.jct.ie/wholeschool/classroom\\_strategies.php](https://www.jct.ie/wholeschool/classroom_strategies.php)

It basically involves the **students taking a more active role in their learning**. The students will be working in groups to try and get information from their peers and they will give feedback to other people in the class. This will happen during class time and I will be teaching normal work but just trying it a different way to see if the students can benefit from this.

All information received will be **confidential** and all students **will remain anonymous**.

#### **Where will the research take place?**

The project will be carried out in ■■■■■ during Irish class. The research will take place over a number of weeks from February until April.

The students will receive a questionnaire pre and post intervention. The questionnaire I am using will be the Piers-Harris 2 questionnaire.

Only a few of the students will be interviewed. Everything will be explained to the students beforehand. They will remain anonymous and all data received will be confidential. The interview will last no longer than 30 minutes.

#### **Where do I get further information?**

Should you require any further information, please do not hesitate to contact me.

You can also receive information on the strategies via the website link above.

You may also contact my supervisor, Anne Burke in Letterkenny Institute of Technology on the following email address: [anne.burke@lyit.ie](mailto:anne.burke@lyit.ie)

## Appendix 3

### **Student Information Sheet**

#### **What is the title of the project?**

The project is called 'How does a cooperative learning strategy impact on students in a post-primary setting?'

#### **What is it about?**

This project is about how we learn. Instead of the teacher doing all the talking, you will be taking a more active role in your learning. You will be given an opportunity to look for answers to things by yourself and also as part of a group. The teacher will still be there to help, if you need help. The teacher will be collecting information during the classes. We are trying to find out how you might learn best and what works and what doesn't. The teacher will be looking to check if you are enjoying the lessons and if your results will be improving.

#### **What will you be asked to do?**

You will have to participate in class and give feedback to your peers in the class for some of the activities. You will be asked to complete a questionnaire before we start these classes. You circle the answers that most suit you. You will be asked to complete the same questionnaire again after we have completed all the classes. Some of you will be asked if you would be happy to do an interview with your teacher. The interview will be used by the teacher to get your feedback on the classes. If you are happy to agree to this, it will last no longer than 30 minutes. The teacher will explain everything to you and you will have a chance to look over your answers.

#### **When will this happen?**

It will happen during Irish class and we will be doing normal class work. We will be just looking at doing things in a different way and seeing if you liked it and was it beneficial.

#### **Who will see this information?**

The information will be gathered by the teacher and will be shared with the supervisor. The supervisor's name is Anne Burke and this is her email address, should you wish to contact her: [anne.burke@lyit.ie](mailto:anne.burke@lyit.ie)

Your name will not appear anywhere on the project and all the data collected will be confidential.

## Appendix 4

Dear Parent/Guardian,

I am currently completing a Masters in Teaching and Learning. As part of the Master of Arts in Teaching and Learning (MALT), in Letterkenny Institute of Technology, I would like to carry out research on a class I am currently teaching, class [REDACTED] Irish class.

The title of my research is **'How does a co-operative learning strategy impact on students in a post-primary setting ?'**

I would like to look at how a strategy such as the **Jigsaw** strategy has an impact on the students and examine if it could help to improve their self-esteem and confidence. I would like to look at what would help the students engage more in the classroom.

Each student will receive a questionnaire pre and post intervention and a few students will be interviewed at the end of the intervention. The purpose of the interview is to get the students' perspective of the intervention and to assess whether they thought it was successful or not. All information received will be **confidential** and all students **will remain anonymous**.

I enclose an **information leaflet**. If you are happy to consent to me carrying out the research with your son/daughter, please sign below.

If you have any questions, please do not hesitate to contact me or my supervisor in LYIT, Anne Burke. Her details are as follows: [anne.burke@lyit.ie](mailto:anne.burke@lyit.ie)

Thanking you,

Marisa Simms.

-----  
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I consent to my son/daughter \_\_\_\_\_ participating in this project with Ms. Simms during their Irish class in [REDACTED]

\_\_\_\_\_  
SIGNED (PARENT/GUARDIAN)



## Appendix 5

### Student Consent Form

#### Project Title:

*'How does a co-operative learning strategy impact on students in a post-primary setting?'*

**Principal Investigator:** M. Simms

The aim of this research is to look at different ways of teaching things and see if these can be of any benefit to you. The new Junior Cycle is encouraging teachers to try these strategies and I would like to examine if they work for every student.

Declaration: I \_\_\_\_\_, acknowledge that:

- **I have been informed about the research and have an opportunity to ask questions.**
- **I consent to take part in this study.**
- **My participation is voluntary.**
- **I can withdraw at any time up to data analysis stage.**

**Participant's name:** \_\_\_\_\_

**Researcher Signature:** \_\_\_\_\_  
M. Simms.

**Supervisor:** Anne Burke, LYIT, contact: [anne.burke@lyit.ie](mailto:anne.burke@lyit.ie)

## **Appendix 6**

### **Interview Questions for Students:**

**Thank you for agreeing to this interview. The reason we are doing this is to get feedback from you of the work we have been doing in class.**

- 1. Did you enjoy the Jigsaw strategy?**
- 2. What did you think about it?**
- 3. What did you enjoy most?**
- 4. What did you least enjoy?**
- 5. Would you like to try it again?**
- 6. Did you see an improvement in your monthly assessment test results?**
- 7. Why do you think this was?**
- 8. What recommendations would you like to make for future lessons?**
- 9. Did you feel included in the group? Why?**
- 10. Did you feel comfortable in the group you were in?**
- 11. Would you rather work by yourself?**
- 12. Have you anything else you would like to add about the jigsaw strategy?**

## Appendix 7

### Timeline for Action Research Intervention

**January 8th** – Distribute Information sheet and consent form for parents

**January 8th**- Discuss the project with the students

**January 22nd**- Gather all parental consent forms and distribute student information and consent forms.

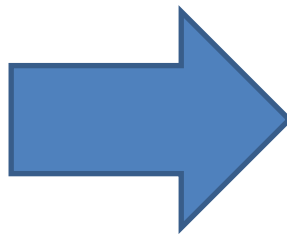
*Monday 29th January to Friday 9th February- Mock examinations*

**Mid-Term Break Monday 12th February to Friday 16th February 2018**

**Monday 19th February**- Commencement of intervention with willing participants.

**Week of 19th February-23rd:** Administer 1st Questionnaires  
Examine monthly assessment results.  
**Commence Intervention with Jigsaw strategy** on mock exam papers.  
Teacher observation  
Reflective diary

**26th February-2nd March**  
**5th March-9th March**  
**12th March-16th March**  
**19th March- 23rd March**



**Jigsaw strategy** and student observation by teacher.  
Student feedback and **monthly assessments**.

**Easter Holidays, Monday 26th March- Friday 6th April 2018**

9th April-13th April- Review monthly assessments results.

*9<sup>th</sup> April- Friday 20<sup>th</sup> April- Whole School Evaluation Management, Leadership and Learning (MLL) Inspection.*

16th April-20th April- Repeat Questionnaire and student interview to take place.

**23rd April- 27th April- Completion of intervention. Commencement of data analysis.**

**During the data collection stage, the researcher will be working on the literature review parallel to this.**

## Appendix 8

### Piers-Harris 2 Questionnaire Results

The first response was taken from their February, pre-intervention questionnaire, the second response was recorded from their May questionnaire, post-intervention.

#### 1. Self- Esteem- No changes.

School-life. 7 questions changed.

1. 21. I am slow at finishing my schoolwork. YES TO NO
2. 22. I am an important member of my class. NO TO YES
3. 24. I give a good report in front of the class. NO TO YES
4. 25. In my school I am a dreamer. YES TO NO.
5. 26. My friends like my ideas. NO TO YES.
6. 34. I often volunteer in school. NO TO YES.
7. 55. I am a good reader. NO TO YES.

All positive improvements. 7 positive changes.

---

#### 2. Self- Esteem- 3 changes.

1. 13. It is usually my fault when something goes wrong. NO TO YES.
  2. 14. I cause trouble to my family. YES TO NO.
  3. 18. I am good in my schoolwork. NO TO YES.
- 2 out of the 3 were positive.

School life- 3 changes.

1. 7. I get nervous when my teacher calls on me. NO TO YES>
  2. 18. I am good in my schoolwork. NO TO YES.
  3. My friends like my ideas. YES TO NO.
- 2 out of the 3 were negative.
- 

#### 3. Self- Esteem- 1 change.

36. I hate school. YES TO NO.
- One positive change.

School life- 6 changes.

21. I am slow in finishing my schoolwork. NO TO YES.
  22. I am an important member of my class. YES TO NO.
  26. My friends like my ideas. YES TO NO.
  39. My classmates in school think I have good ideas. YES TO NO.
  50. When I grow up, I will be an important person. NO TO YES.
  55. I am a good reader. YES TO NO.
- One positive change.
- 

#### 4. Self- Esteem- 4 changes.

12. I am well behaved in school. YES TO NO.

13. It is usually my fault when something goes wrong. NO TO YES.

27. I often get into trouble. NO TO YES.

36. I hate school. YES TO NO.

One positive change.

School- life- 4 changes.

7. I get nervous when the teacher calls on me. YES TO NO.

12. I am well behaved in school. YES TO NO.

34. I often volunteer in school. NO TO YES.

43. I am dumb about most things. NO TO YES.

2 positive changes.

---

5. Self -Esteem -2 changes.

58. I think bad thoughts. NO TO YES.

60. I am a good person. YES TO NO.

Both negative changes.

School-life. 4 changes.

21. I am slow in finishing my school work. NO TO YES.

25. In school I am a dreamer. NO TO YES.

39. My classmates in school think I have good ideas. NO TO YES.

52. I forget what I learn. YES TO NO.

2 positive changes.

---

6. Self- Esteem- 8 changes.

12. I am well behaved in school. NO TO YES>

14. I cause trouble to my family. YES TO NO.

19. I do many bad things. YES TO NO.

20. I behave badly at home. YES TO NO.

30. My parents expect too much of me. YES TO NO.

38. I am often mean to other people. YES TO NO.

48. My family is disappointed in me. YES TO NO.

58. I think bad thoughts. YES TO NO.

8 positive changes.

School-life- 3 changes.

12. I am well behaved in school. NO TO YES.

16. I am an important member of my family. NO TO YES.

43. I am dumb about most things. YES TO NO.

All positive- everything positive.

---

7. Self- Esteem- 2 changes.

14. I cause trouble to my family. YES TO NO.

20. I behave badly at home. YES TO NO.

One positive change.

School-life- 7 changes.

7. I get nervous when the teacher calls on me. NO TO YES.

16. I am an important member of my family. NO TO YES.

21, I am slow in finishing my schoolwork. NO TO YES.

43. I am dumb about most things. NO TO YES.

50. When I grow up I will be an important person. NO TO YES.

52. I forget what I learn. NO TO YES.

55. I am a good reader. YES TO NO.

**2 positive changes.**

---

**8- Self- Esteem - 3 changes.**

**27. I often get into trouble. YES TO NO.**

**30. My parents expect too much of me. YES TO NO.**

**58. I think bad thoughts. YES TO NO.**

**All positive changes.**

**School-life. 8 changes.**

**16. I am an important member of my family. YES TO NO.**

**21. I am slow at finishing my schoolwork. YES TO NO.**

**25. In school I am a dreamer. YES TO NO.**

**34. I often volunteer in school. NO TO YES.**

**39. My classmates in school think I have good ideas. NO TO YES.**

**43. I am dumb about most things. YES TO NO.**

**50. When I grow up I will be an important person. NO TO YES.**

**52. I forget what I learn. YES TO NO.**

**7 positive changes.**

---

**9. Self- Esteem- one change.**

**18. I am good in my schoolwork. YES TO NO.**

**One negative change.**

**School-life- 2 changes.**

**18. I am good in my schoolwork. YES TO NO.**

**43. I am dumb about most things. NO TO YES.**

**Negative.**

**All negative.**

---

**10. Self -Esteem. NO changes.**

**School-life- 2 changes.**

**22. I am an important member of my class. NO TO YES.**

**52. I forget what I learn. YES TO NO.**

**2 positive changes.**

---

**11. Self-Esteem- One change.**

**36. I hate school. YES TO NO.**

**One positive change.**

**School- life- 8 changes.**

**5. I am smart. NO TO YES.**

**7. I get nervous when the teacher calls on me. YES TO NO.**

**22. I am an important member of my class. NO TO YES.**

**26. My friends like my ideas. NO TO YES.**

**34. I often volunteer in school. NO TO YES.**

**39. My classmates in school think I have good ideas. NO TO YES.**

**43. I am dumb about most things. YES TO NO.**

**52. I forget what I learn. YES TO NO.**

---

**8 positive changes.**

## Appendix 9

- |   |     |    |
|---|-----|----|
| 1. My classmates make fun of me.                      | yes | no |
| 2. I am a happy person.                               | yes | no |
| 3. It is hard for me to make friends.                 | yes | no |
| 4. I am often sad.                                    | yes | no |
| 5. I am smart.  | yes | no |
| 6. I am shy.  | yes | no |
| 7. I get nervous when the teacher calls on me.        | yes | no |
| 8. My looks bother me.                                | yes | no |
| 9. I am a leader in games and sports.                 | yes | no |
| 10. I get worried when we have tests in school.       | yes | no |
| 11. I am unpopular.                                   | yes | no |
| 12. I am well behaved in school.                      | yes | no |
| 13. It is usually my fault when something goes wrong. | yes | no |
| 14. I cause trouble to my family.                     | yes | no |
| 15. I am strong.                                      | yes | no |
| 16. I am an important member of my family.            | yes | no |
| 17. I give up easily.                                 | yes | no |
| 18. I am good in my schoolwork.                       | yes | no |
| 19. I do many bad things.                             | yes | no |
| 20. I behave badly at home.                           | yes | no |
| 21. I am slow in finishing my schoolwork.             | yes | no |
| 22. I am an important member of my class.             | yes | no |
| 23. I am nervous.                                     | yes | no |
| 24. I can give a good report in front of the class.   | yes | no |
| 25. In school I am a dreamer.                         | yes | no |
| 26. My friends like my ideas.                         | yes | no |
| 27. I often get into trouble.                         | yes | no |
| 28. I am lucky.                                       | yes | no |
| 29. I worry a lot.                                    | yes | no |
| 30. My parents expect too much of me.                 | yes | no |
| 31. I like being the way I am.                        | yes | no |

## The Way I Feel About Myself

### PIERS-HARRIS 2

#### AutoScore™ Form

by Ellen V. Piers, PhD, Dale B. Harris, PhD,  
and David S. Henberg, PhD



Client's Name (or ID #): \_\_\_\_\_

Today's Date: \_\_\_\_\_ Age: \_\_\_\_\_

Gender:  Unknown  Female  Male Grade: \_\_\_\_\_

School: \_\_\_\_\_

Teacher's Name (optional): \_\_\_\_\_

Race/Ethnicity:  Asian  Hispanic  White  
 Black  Native American  Other

#### Directions

Here are some sentences that tell how some people feel about themselves. Read each sentence and decide whether it tells the way you feel about yourself. If it is true or mostly true for you, circle the word *yes* next to the statement. If it is false or mostly false for you, circle the word *no*. Answer every question, even if some are hard to decide. Do not circle both *yes* and *no* for the same sentence. If you want to change your answer, cross it out with an X and circle your new answer.

Remember that there are no right or wrong answers. Only you can tell us how you feel about yourself, so we hope you will mark each sentence the way you really feel inside.

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W 3884

## **Appendix 10**



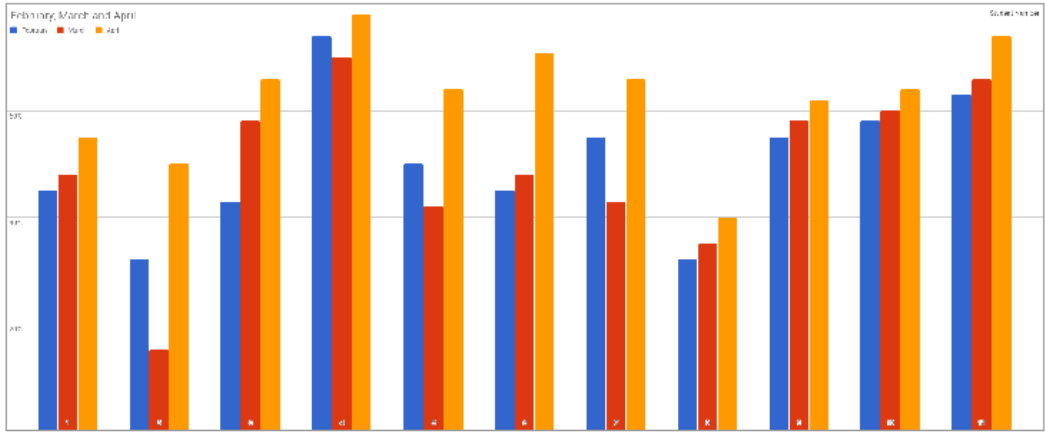
## Appendix 11

### Student Results for Monthly Assessments

<b>Student number</b>	<b>February</b>	<b>March</b>	<b>April</b>
1	45%	48%	55%
2	32%	15%	50%
3	43%	58%	66%
4	74%	70%	78%
5	50%	42%	64%
6	45%	48%	71%
7	55%	43%	66%
8	32%	35%	40%
9	55%	58%	62%
10	58%	60%	64%
11	63%	66%	74%

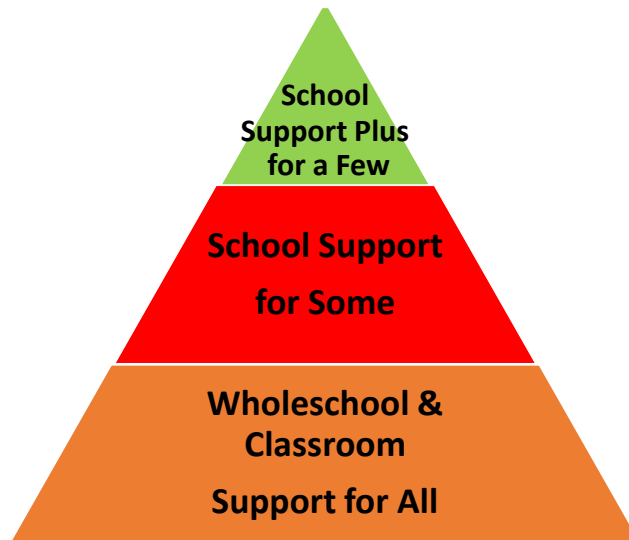
## Appendix 12

Student Number	February	March	April
1	45%	48%	55%
2	35%	38%	45%
3	42%	45%	52%
4	74%	78%	85%
5	55%	58%	65%
6	48%	52%	60%
7	52%	55%	62%
8	38%	42%	50%
9	58%	62%	70%
10	65%	68%	75%
11	60%	65%	72%



Appendix 13

New Allocation Model



(DES, 2018a)

**Underlying principles:** The changes to the allocation of additional teaching resources are based on the following four principles outlined below:

Table 1:

<ul style="list-style-type: none"><li>• All students, irrespective of SEN, are welcomed and enabled to enrol in their local schools.</li></ul>
<ul style="list-style-type: none"><li>• Additional teaching supports are allocated to schools in line with the school's educational profile, and are utilised by schools to support the meaningful education and inclusion of students with SEN in mainstream schools.</li></ul>
<ul style="list-style-type: none"><li>• Additional teaching supports are deployed and managed effectively by schools to support students with SEN, in line with their assessed learning needs.</li></ul>
<ul style="list-style-type: none"><li>• A whole-school approach is adopted by schools to the education of students with SEN, including programme planning and the implementation of early-intervention and prevention programmes.</li></ul>

## Appendix 14

### Extracts from the Reflective Diary

### Reflective Diary comments

#### January 2018

All parental and student consent received. No questions/queries.

#### February 2018.

Initial instructions took almost a full class to explain. I showed them a video of how it would work from JCT website. Even after explaining in detail and showing them the video of what they would be doing, a particular student asked:

“Do I have to speak in front of the class?” and “Is this going to be recorded, like the CBA’s?”

It was evident that this student did not feel confident talking in front of their peers. I tried to dispel any doubts the student had and gave assurance that it would not be recorded either.

Another student wanted to know if the strategy would entail any extra work:

“Is there any extra work?”

#### February Monthly Assessments:

2 out of the 11 students got below 40%.

Highest score 74%

#### Distribution of the Piers- Harris 2 Questionnaire:

A student asked:

“Do we have to put our name on this?”

Assurances were given that they did not need to put their names on it as I would be using a numbering system to assess them. Reassured them that all information given was confidential and urged them to be as honest as possible.

#### During the Jigsaw Strategy week 1:

A student was not happy that they were not with their friends and asked twice:

“Can I not just sit beside student X?”

The request was denied and the student was told they could not be seated with their friend for the duration of the Jigsaw strategy.

Student was not happy. Did not really engage in group activity, despite prompting. Student was observed watching other tables closely. Confidence issue perhaps? Same student got below 40% in monthly assessment.

Observed some students were slower than others at taking down notes/answers for their section of the ‘puzzle’. I offered them mini whiteboards and coloured card as an alternative to writing down the answers.

All appear to prefer this to writing in their copies.

Week 2 and 3

Most students appear to have engaged with the intervention.

One student told me, “I remember things better”.

The student who had previously wanted to be with their friend has engaged better than last week.

Two groups of students had to be reminded to stay on task.

**March monthly assessments:**

2 out of the 11 students got less than 40%. A little disappointing.

WSE-MLL announced for 2 week period following Easter break.

9th-20th April. WSE- MLL.

Informed the students we would be carrying on as normal and would be continuing with the Jigsaw strategy.

They wanted to know *if the inspector would be asking them questions*. Tried to reassure them. Obvious some of them were very nervous to be asked a question. Overheard a particular student saying they “*might stay at home*” during the two days of class inspections.

**April monthly assessments**

All students passed their monthly assessments. Student number 7 had the biggest increase going from 45% in Feb to 48% in March and finally 71% in their April monthly assessment.

All students asked if they would like to partake in the student interview. One student had volunteered from when I initially explained the project to them in January.

Student two said they would do it after I asked them specifically.

Student two did not engage as much as student one during the intervention.

## Appendix 15

### Student A

#### 1. Did you enjoy the Jigsaw strategy?

Yes, I did.

#### 2. What did you think about it?

It was good and a different way of learning in the class.

#### 3. What did you enjoy the most?

I enjoyed working in group and pairs.

#### 4. What did you least enjoy?

I enjoyed all of it.

#### 5. Would you like to try it again?

Yes, I would.

#### 6. Did you see an improvement in your monthly assessment test results?

Yes, **I remembered more** because there was **less writing** involved.

#### 7. Why do you think it was?

I don't know

#### 8. What recommendations would you like to make for future lessons?

None. I would do it again because there is **less writing**.

#### 9. Did you feel included in the group? Why?

Yes **I felt included**.

#### 10. Did you feel comfortable in the group you were in?

I felt very comfortable in my group.

#### 11. Would you rather work by yourself?

No, because **you take in more from others in the group**.

#### 12. Have you anything else you would like to add to the Jigsaw strategy?

No, I do.

## Student B

**1. Did you enjoy the Jigsaw strategy?**

Yes, I did.

**2. What did you think about it?**

I liked working in groups and chatting.

**3. What did you enjoy the most?**

I enjoyed groups, **helping each other out**, it was enjoyable.

**4. What did you least enjoy?**

Nothing, *I liked it all.*

**5. Would you try it again?**

Yes, *I would.*

**6. Did you see an improvement on your monthly assessment test results?**

Yes, *I remembered things better writing on the white boards.*

**7. Why do you think this was?**

It was different **"far better"** than writing things down.

**8. What recommendations would you liked to make for future lessons?**

*I don't have any.*

**9. Did you feel included in your group? Why?**

**Yes, I felt included.**

**10. Did you feel comfortable in the group you were in?**

Yes, *I felt comfortable in the group I was in.*

**11. Would you rather work by yourself?**

No, *I would rather work with someone because you can help each other out.*

**12. Have you anything else you would like to add to the Jigsaw strategy?**

No, *I just enjoyed it.*

