

Running head: A CRITICAL EXAMINATION OF STANDARDISED TESTING OF MINORITY
LANGUAGE CHILDREN

Marino Institute of Education

Title: A Critical Examination of Standardised Testing of Minority Language Children

Thesis

By

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Submitted in partial fulfilment of the
requirements of the award of the degree of
Master in Education Studies (Intercultural Education)

Date: 9th June 2017

Acknowledgements

I would like to express my thanks to the Principals of both schools involved in this project.

Their interest, trust and support was invaluable in helping to complete this dissertation.

I would also like to thank my supervisor Dr. Rory McDaid for his guidance, patience, and advice during the course of the year.

Declaration

I hereby declare that this dissertation is a presentation of my own original research work. Wherever contributions of others are involved, every effort is made to indicate that clearly. This work has not been submitted previously to any other educational institution. The work was done under the guidance of Dr. Rory McDaid at the Marino Institute of Education, Dublin. I agree that the library may lend or copy this dissertation upon request.

Paula Fitzsimons

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Abstract

In this dissertation I critically examined the performances of children who had English as an additional language (EAL) on standardized tests and compared their performances to the performances of their peers who had English as a first language (Non-EAL). The study compared the performances of the EAL and Non-EAL groups on standardised tests of literacy and numeracy, from 1st to 6th class, in a Dublin primary school. It also compared the performances of the groups on other commonly used standardised tests, the NRIT (Non-Reading Intelligence Test) and the NVRT (non Verbal Reasoning Test). Patterns of statistically significantly lower scores were identified in the performances of the EAL groups on tests that had strong verbal components. The findings from this study question the validity, fairness and careful consideration of using such standardised tests with EAL children.

List of Abbreviations

AERA: American Educational Research Association

CPD: Continuous Professional Development

DES: Department of Education and Skills

DJELR: Department of Justice Equality and Law Reform

EAL: English as an Additional Language

EPSEN Act (2004): Education of Persons with Special Educational Needs Act (2004)

ESRI: Economic and Social Research Institute

EU: European Union

IES: Intercultural Education Strategy (2011)

ITE: Initial Teacher Education

IQ: Intelligence Quotient

M: Mean Score

Micra-T: Mary Immaculate Reading Attainment Test

ML: Minority Language

N: Number

NCCA: National Council for Curriculum and Assessment

NCCRI: National Consultative Committee on Racism and Interculturalism

NCSE: National Council for Special Education

NEPS: National Educational Psychological Services

NNRIT: New Non Reading Intelligence Test

Non – EAL: Non English as an Additional Language

NRIT: Non Reading Intelligence Test

NVRT: Non verbal Reasoning Test

OECD: Organization for Economic Cooperation and Development

OMI: Office of the Minister for Integration

p : probability

PDST: Professional Development Service for Teachers

PISA: Programme for International Student Assessment

PSAK: Primary School Assessment Kit

SD: Standard Deviation

SEN: Special Educational Needs

SNA: Special Needs Assistant

Sigma T: name given to mathematics test (borrowed from a method of calculating oceanic temperature)

SPSS: Statistical Package for the Social Sciences

t : statistically significant difference

UNESCO: United Nations Educational, Scientific and Cultural Organisation

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Chapter One: Introduction

I have spent more than three decades teaching in the primary school sector of the Irish education system. During those years I have witnessed many changes in education, at both school and systems levels. Recent decades have seen Irish society change and evolve from being a mainly white, Irish, catholic, monolingual society into one far more ethnically, culturally, religiously and linguistically diverse. This change is obvious in classrooms around the country and has presented schools and teachers with many opportunities, as well as more well documented challenges in meeting the religious, linguistic and cultural needs of their students (Byrne, Darmody, McGinnity, & Smyth, 2009; Byrne, Darmody, McGinnity, & Smyth, 2010; Census, 2011, 2016; Darmody & Smyth, 2011; Darmody, Fass & Sokolowska, 2015).

Nations around the world employ different philosophical and political models to address cultural and religious diversity in their societies and in their schools. Assimilation, multiculturalism, and interculturalism are all such models. Assimilation is a policy aimed at absorbing minority ethnic groups into the majority community, with an expectation that communities, their needs and their culture would become invisible or would expire. The United States (Alba & Nee, 2003), France (Modood, 2009), and Ireland in the past, in relation to the Traveler community, (National Consultative Committee on Racism and Interculturalism [NCCRI], 2007) are examples of nations who have adopted an assimilationist model.

Multiculturalism acknowledges the need for recognition and celebration of different cultures in a society. Britain, the Netherlands, Canada, Australia (previously assimilationist) and Malaysia have historically worked with the concept of multiculturalism (Darmody, Fass & Sokolowska, 2015). One criticism has been that it

allowed the growth of parallel communities with little interaction between them, whilst glossing over issues such as racism and economic deprivation (NCCRI, 2007).

Interculturalism, a relatively new term, (Council of Europe, 2008) espouses interactions between majority and minority cultures to foster understanding and respect. It is about ensuring that cultural diversity is acknowledged and catered for. An intercultural society is about inclusion “by design, not as an add-on or afterthought. It is essentially about creating the conditions for interaction, equality of opportunity, understanding and respect.” (Department of Justice, Equality and Law Reform [DJELR], 2005 p. 38). Within education, interculturalism is understood to encompass the development and implementation of official policies and reforms that aim to promote equal education opportunities to culturally (and/or ethnically) diverse groupings, regardless of origin, social rank, gender or disability (Angelides, Faas & Hajisoteriou, 2014, p. 305). Ireland has employed an intercultural model to address cultural and religious diversity in Irish society.

Intercultural Education

Successive Irish governments have produced numerous circulars, policies and documents to address issues of diversity in education. *Charting our Education Future: White Paper on Education* (Department of Education and Science [DES], 1995, p. 5), advocated “the promotion of quality, equality, pluralism, partnership and accountability”. *Planning for Diversity – The National Plan Against Racism 2005-2008*, (DJELR, 2005), mandated development of a national intercultural education strategy, and advocated for an intercultural school environment. The National Council for Curriculum and Assessment (NCCA, 2005; NCCA, 2006) produced *The Intercultural Education Guidelines*, for primary schools in 2005 and for secondary schools in 2006. These guidelines define intercultural education in Irish schools as “education that respects, celebrates, and

recognizes the normality of diversity in all aspects of human life, promotes equality and human rights, challenges unfair discrimination, and provides the values on which equality is built' (NCCA, 2005, p. 169). *The Intercultural Education Strategy 2010- 2015* (DES & OMI, 2010) sought to "ensure that all students, irrespective of their identity, nationality or background, are achieving their full potential in an inclusive, integrated and intercultural education environment" (p.5). Ensuring recognition, respect, inclusion, non-discrimination and equality of opportunity are fundamental in an intercultural education system.

Interculturalism in education also suggests that social justice and equity values mobilise teachers towards transformation of their pedagogy and curriculum in order to empower their marginalised students (Zembylas & Iasonos, 2010). Teachers in an intercultural education system are required to reveal the 'hidden' educational processes that perpetuate discrimination and to recognise and challenge oppression by promoting education for empathy, moral consciousness and examination of discrimination from the victim's perspective (Banks, 2009). The challenge for teachers in an intercultural education system is that they must be critical, ask critical questions and pursue inquiry to ensure that equality is guaranteed and discrimination is exposed and recognized. Revell (2012) explains that

being critical is not just about asking questions, even challenging questions; it is about asking questions that expose relations of power and dominance. And the inquiry itself is not (just) about those relationships as they relate to the self but as they relate to issues of justice and social freedom (p. 115)

Ensuring rights to equality and non-discrimination however, is not only a moral obligation for teachers, it is also a legal obligation. Schools must operate within the framework of the Irish constitution, *Bunreacht na hEireann* (1937), and other national legislation such as the *Education Act* (1998), the *Equal Status Act* (2000, 2004) and the

Education of Persons with Special Educational Needs Act (EPSEN, 2004). These laws provide particular legal guarantees to equality and non-discrimination for all children in the education system in the Republic of Ireland.

Equality in Intercultural Education

Despite legal and moral obligations, strong challenges to the delivery of equality in education continue to emerge, with equality in education and how best to deliver it remaining a matter of debate. ‘Savage inequalities’ (Kozol, 1991) in education and educational outcomes and the genuine difficulty in mitigating them have resulted in an immense amount of philosophical and conceptual work on the idea of equality in the last thirty years (Baker & Lynch, 2005). Definitions and conceptions of equality vary and range from being viewed as a matter of dividing educational and education-related resources more equally and more fairly (Lynch, 2000) to equality and freedom from discrimination in access to schools, to equality of participation in education by certain social groups (Darmody, Faas & Sokolowska, 2015; Darmody & Smyth, 2011; ESRI, 2010; Lynch, 2000; Baker & Lynch, 2005).

Baker & Lynch (2005) define equality in the more “robust sense as ‘equality of condition’” (p.1) which “involves the equal enabling and empowerment of individuals in society” (p.2). Within education, this definition includes not only equality in educational resources but also includes equality of respect and recognition, equality of power, and equality of love, care and solidarity in the purposes and processes of education (Baker & Lynch, 2005). A truly intercultural education system demands such a definition of equality and it is this understanding of equality in education that underpins this dissertation.

Equality in Assessment

From a very early age children are exposed to a programme of formal and informal testing and assessment and this continues across their school lives (Elwood & Lundy,

2010). Teachers continually collect, synthesize, and interpret information about their students' learning and it would be difficult to envisage a description of teaching that does not accord assessment an essential role (Kellaghan, Moran & Shiel, 2010, p.14).

Education and assessment are intrinsically linked and a child's right to recognition, respect, freedom from discrimination and equality in education includes the right to recognition, respect, freedom from discrimination and equality in assessment.

The NCCA (2007) recognizes the existence of bias and discrimination in tests and testing in the *Guidelines on Assessment* (NCCA, 2007) and it cautions teachers and schools regarding bias and the effects of culture and language on assessment. It proceeds to encourage schools to ensure that "assessments are carried out in circumstances that are appropriate for children with special educational needs and children from minority language (ML) backgrounds" (p. 96). The *Intercultural Education Guidelines* (NCCA, 2006, p. 151-159) provides one whole chapter of advice for teachers and schools on how to carry out assessment in a non-discriminatory way. Teachers are clearly recognized in these documents, and in the literature, as playing a significant role in mediating the impact of ethnicity and language on schooling and assessment of children (Archer & Francis, 2007; Cummins, 2001; Delpit, 2012; DES, 2010; Devine, 2005; Gay, 2010; Gillborn, 2005).

Researchers in Ireland indicate however, that intercultural guidelines in education remain unknown to many teachers (Irwin, 2009, Whitaker & Kenny, 2013), while many other researchers, both national and international, expose that education and assessment are deeply implicated in the production and reproduction of inequality, institutional racism, and the devaluing of ML children who underperform in tests and assessments (Alford, 2014; Baker & Lynch, 2005; Bryan, 2012; Conteh, 2012; Cummins, 2001/ 2009/ 2011/ 2012/ 2014; De Angelis, 2014; Devine, 2005/ 2011/ 2013; Gandy, 2013).

In this dissertation I pose critical and challenging questions that focus on assessment in education. A child's legal and moral right to equality and justice in education, includes the right to equality and justice in assessment (Elwood & Lundy, 2010; NCCA, 2005, 2007). A growing unease around the use of *standardised* tests in English with ML children has led me to this critical inquiry of the use of such tests with ML children on the basis that these tests require levels of English language proficiency that many ML children have not had the time or opportunity to develop prior to testing. Tests such as the Non-Reading Intelligence Test, ([NRIT], Young, 1989) and the New Non-Reading Intelligence Test, ([NNRIT], Young & McCarthy, 2012) used to assess a child's intelligence, and literacy tests and numeracy tests in English all require high levels of academic English language proficiency. ML children who *appear* sufficiently proficient in English, because of good *conversational* and *communication* skills, may not yet have developed the levels of *academic* language proficiency necessary for success in the testing situation (Cummins, 2000, 2001, 2011, 2012, 2014). This places ML children at a disadvantage and in doing so denies them their right to equality of opportunity in assessment. The potential for damage resulting from the failure to challenge discrimination in testing and through misinterpretation of the meanings of test results, along with issues of justice, children's rights and ethics are all reasons that prompt this study at this time.

In this dissertation I critically examined the performances of children, who have English as an additional language (EAL), on standardized tests and compared them to the performance of their peers who have English as a first language (Non-EAL). In this study, I argue that any consistent, statistically significant underperformance by EAL children, as a group, calls for examination, analysis, and careful consideration of linguistic bias and discrimination in tests and for a critical questioning of appropriateness and validity of

using such tests with EAL children. Standardised test results have become important markers of academic ability, achievement and ‘standards’ in our schools and they effect the perception of the DES (2011, 2011a, 2017), teachers, parents and most importantly self-perception of the child.

I examined the historical results of five cohorts of children on standardized tests as they progressed through the primary school. I examined the results of literacy, numeracy, verbal intelligence and non-verbal reasoning tests, from 1st to 6th class, for each cohort of children. I compared the results of the EAL children with the results of their Non-EAL peers. The examination of the data was guided by the following research questions-

1. Are there statistically significant differences between the performances of EAL and the Non-EAL groups on standardised tests?
2. Is there evidence to suggest that the EAL groups were disadvantaged by their levels of academic language proficiency in the tests?
3. Are changes required to policy and practice in relation to the assessment of EAL children?

Philosophical Approach

I believe in the full and harmonious development of each individual child. I believe that the role of the school is to support and encourage the development of a solid and true feeling of self-worth in each child, and to foster their ability to effectively relate to others. If successful this will help in their empowerment and allow them to become confident, respectful, successful and valuable members of an inclusive society. Every child’s individual and diverse talents and abilities should be valued and nurtured equally in the classroom to enable them realise their “potential as a unique individual” (Government of Ireland, 1999, p. 7).

This philosophy is in line with the spirit of the *Primary School Curriculum* (1999) which celebrates the uniqueness of the child, as it is expressed in each child's personality, intelligence and potential for development. The *Primary School Curriculum* (1999) is designed to nurture the child in all dimensions of his or her life—spiritual, moral, cognitive, emotional, imaginative, aesthetic, social and physical. It also recognizes the integrity of each child's life aiming to cater for their needs and potential as they evolve day by day, laying the foundations for happiness and fulfilment in later education and in adult life as a member of society, seeking to balance individual and social development. Its overall vision is to enable children to meet, with self-confidence and assurance, the demands of life, both now and in the future. This vision respects, celebrates, and recognizes the normality of diversity in all aspects of human life, it promotes equality and human rights, it challenges unfair discrimination, and it provides the values on which equality is built (NCCA, 2005, p. 169).

Teachers are in a powerful position to insure that ML children experience their rights to equality and justice in education and assessment. It is through the management of diversity in schools, and in the micro-interactions between the teacher and the child in classrooms, that respect for diversity is fostered, injustice is challenged and children are empowered (Archer & Francis, 2007; Baker & Lynch 2005; Cummins, 1986; Gay, 2010). It is in such classrooms that children are afforded real opportunities to experience a truly intercultural education (NCCA, 2005).

Conclusion

The Irish Government has employed an intercultural education model to address the needs of our increasingly diverse school going population. This model not only requires recognition and respect for diversity it also requires the equal empowerment and

enabling of children through the promotion of equality and human rights and the challenging of unfair discrimination in the purposes and processes of education.

In Chapter Two I review the literature in relation to assessment and standardised testing of primary school children in Ireland, and I investigate neo-liberal influences on education policy and discourse in the West. I explore the literature in relation to conceptual work on the development of second languages in ML children and how this interacts with the assessment of ML children. I also review the literature on the powerful relationships between teachers, ML children and test results, the ethics and validity of testing and I conclude the chapter with a summary of the literature review and a brief description of Chapter Three, the methodology chapter for this study.

Chapter Two: Literature Review

Introduction

Chapter Two reviews the literature in relation to assessment and standardised testing of primary school children in Ireland, it investigates neo-liberal influences on education policy and discourse in the West, it explores the literature in relation to conceptual work on the development of second languages in ML children and how this interacts with the assessment of ML children. I also review the literature on the powerful relationships between teachers, ML children and test results, the ethics and validity of testing and I conclude the chapter with a summary of the literature review and a brief description of Chapter Three, the methodology chapter for this study.

Assessment in the Primary School

The NCCA (2007) describes assessment in the primary school as “the process of gathering, recording, interpreting, using and reporting information about a child’s progress and achievement in developing knowledge, skills and attitudes” (p. 7). The assessment process concerns not only testing but the daily interactions between the teacher and the child that include moment by moment conversations, observations and actions (NCCA, 2007). It is through this mix of assessment methods that the teacher constructs a comprehensive picture of the short-term and long-term needs of the child and plans future work accordingly (DES, 1999). DES (1999) and NCCA (2007) documents highlight, very explicitly, the need to ensure a balance of practice in schools between assessment of learning and assessment for learning (Mac Ruairc, 2009). These documents recommend the use of assessment strategies that support the learning and assessment of all children irrespective of gender, race, ethnicity or class. Assessment in these NCCA (2007) and DES (1999) documents is carefully balanced between formal and informal assessment and the fundamental understanding is that assessment is about supporting the needs of the

child thereby enabling them to reach their “full potential as a unique individual” (DES, 1999, p. 7).

In recent years, the influence of the Organisation of Economic and Co-operative Development (OECD) and the impact felt through the production of league tables across member states through the Programme for International Student Assessment (PISA) has swayed national education policies in Ireland and in other countries (Devine, 2013). Student performance on PISA, together with the media frenzy surrounding it, has led to states engaging in a discourse of comparing, contrasting and measuring the effectiveness of their own national education policies in light of what takes place elsewhere (Devine, 2011).

The National Literacy and Numeracy Strategy 2011-2020 (DES, 2011), issued in response to the disappointing performance of Irish students on PISA 2011, outlined the importance of raising standards in schools to the levels achieved in the ‘highest performing countries’, so that we can continue “to grow our indigenous knowledge economy” and continue to attract “high-value jobs through inward investment” (p.8). Very specific linkages are made in this, and other more recent documents, between the indicators of children’s performance in school and the maximisation of economic growth (Devine 2013; DES, 2011; DES, 2016; ESRI, 2015). Devine (2013) and others highlight that such linkages have placed schools in a compromised position where they are viewed, by some, as sites of human capital formation, with standardized testing becoming the method of measuring quality and standards, and children who underperform on tests in danger of being ‘valued’ differently (Archer & Francis, 2007; Connell 2013).

Standardised Tests

A standardised test is a procedure designed to assess the abilities, knowledge, or skills of individuals under clearly specified and controlled conditions relating to (i)

construction, (ii) administration; and (iii) scoring, to provide scores that derive their meaning from an interpretative framework that is provided with the test (Kellaghan, Moran & Shiel, 2010). Standardized testing has been widespread in primary schools in Ireland for many years. In 1993, four out of five principal teachers reported that their schools had a policy of administering standardized tests in English reading, with this figure increasing to 97% in 1998 ((Kellaghan, Moran & Shiel, 2010; Cosgrove et al., 2000).

Education policy aimed at raising standards in primary schools included the introduction of mandatory testing in literacy and numeracy in 2nd, 4th and 6th classes in 2012 and the reporting of results to the DES (DES, 2011). This policy facilitates the centralized analysis of assessment data and allows for the monitoring of standards on a national basis (DES, 2011). Data from standardized tests has been described by the DES (2017) and the National Council for Special Education (NCSE) as information that “provides a broad and objective basis to establish differences between schools in levels of relative overall pupil educational achievement” (p. 8).

These policies not only allow for the analysis, monitoring, and reporting of national standards in literacy and numeracy they also allow for data to be used for other purposes. Aggregated data from standardized test results has recently been used to support decisions around the allocation of resources to schools (DES, 2017). The status of standardized testing has been elevated in schools by government policies, ensuring that it has become firmly established as an important and essential element of assessment in primary schools. Maintaining the balance in assessment methods advocated by earlier DES (1999) and NCCA (2007) documents becomes a challenge under such circumstances.

Literacy and Numeracy tests approved for use in Irish primary schools include the Drumcondra Primary Reading Tests and the Drumcondra Primary Maths Tests,

colloquially called ‘The Drumcondras’, and the Micra-T reading test and the Sigma-T mathematics test. These tests are regularly updated and are designed to provide primary teachers with high quality, accurate information on the aptitudes and achievements of their pupils and have been specifically developed for an Irish population and Irish school curricula (Education Research Centre, [ERC], 2017).

Another standardised test used in Irish primary schools is the Non Reading Intelligence Test (NRIT) (Young, 1989), recently re-standardised and re-named as the New-Non Reading Intelligence Test (NNRIT) (Young & McCarthy, 2012). Data on the use of this test is very limited, however anecdotal evidence from colleagues and test suppliers would indicate that this test is widely used in schools around Ireland. The NRIT is supported for use in Irish primary schools by National Educational Psychological Services (NEPS) in their publication *Continuum of Support, Guidelines for Teachers* (DES, 2007). Teachers and school Principals were recently directed to use their “professional judgment in applying the principles and practices set out in the *Continuum of Support Guidelines (2007)*” in the identification of pupils for additional teaching support (DES, 2017, p. 13). The NRIT is specifically recognized in these guidelines on page 27.

The NRIT/NNRIT, Levels 1 – 3, are group administered verbal intelligence tests. Scores are calculated based on the raw score achieved by the child on the test and on the age of the child at the time of testing. The NRIT/NNRIT is an important element of a suite of tests used in Irish primary schools and the manuals state that correlations with other intelligence tests, including the Stanford Binet ‘L’, support the description of the NRIT/NNRIT tests as “tests of verbal intelligence” (Young, 1989, p. 41; Young & McCarthy, 2012, p. 45). It is used in conjunction with literacy and numeracy to help inform whether children are performing in line with their ability.

Neoliberal Influences on Education Policy and Assessment

Neo-liberal economic globalization, declines in public funding, and the new public management are all cited as suspects in the shaping of education policy nationally and internationally over the last number of years (Bittlingmayer et al, 2016; Connell 2013; Devine, Grummell & Lynch 2012; Devine, 2013; Faul, 2014; Froese-Germain, 2010; Meunier, 2011). Connell (2011, 2013) explains that neo-liberalism broadly means the agenda of economic and social transformation under the sign of the free market. With regard to policies that are important to citizens such as education, health, and social services neoliberalism values competition and excellence over equal rights and social cohesion. As education systems become increasingly directed towards neo-liberal performance based goals, it influences what is valued within the more competitive market driven discourse (Connell, 2013; Munoz, 2015). Value is placed on those who produce and perform, as they contribute to the economic ‘talent pool’, with an implicit devaluing of those who do not succeed (Devine, 2013). Linkage between the rise in concern regarding educational ‘standards’ and testing has been documented in line with a rise in neo-liberal social policy and a rise in the marketization of education (Weiler, 1993; Giroux, 2002).

Within the neo-liberal movement ‘achievement’ is extraordinarily narrowly conceived; almost exclusively in terms of academic attainment measured by exam credentials and test results (Archer & Francis, 2007). There is little room in the neo-liberal agenda for broader views of education such as facilitating citizenship, general knowledge, social skills, or any other of the raft of potential functions of education (Archer & Francis, 2007; Connell, 2013). Instead, tropes of excellence and high standards pepper neo-liberal education policy documents, both nationally and internationally, and the speeches of education ministers, policy makers and legislators.

Many scholars argue that since the system of tests and examinations measures a set of skills and performances defined within the dominant, upper-middle-class practices of living, the school system's capacity for cultural and class diversity is quietly but powerfully constricted (Archer and Francis, 2007; Baker & Lynch, 2005; Connell, 2013; Cummins, 2001). Working-class and ML children are tested on tests that are primarily suited to the linguistic capital of middle-class children, and not surprisingly they generally do worse at them than middle-class children (Archer and Francis, 2007; Baker & Lynch, 2005; Connell, 2013; Cummins, 2001; Mac Ruairc, 2009). Researchers indicate that bilingual and multilingual children cannot be compared to monolingual children on a standardized test which has been created according to ideal monolingual norms (Brown, 2013; De Angelis, 2014) as bilingual and multilingual development follow a different trajectory to monolingual development (Cummins, 2001). Thus the hierarchy of success and failure solidifies, and schools serving mainly working-class and migrant communities are collectively re-defined as failures (Connell, 2013; Devine, 2013).

The difficulty is that the creation of this elaborate system of sorting sheep from goats, winners from losers, top students from bottom students, is deeply corrosive of education. Social exclusion is antithetical to the inclusive character of educational relationships. Respect and trust are undermined by the jockeying for position in competitive markets. Educational institutions – and this includes universities, who are supposed to be beacons of truth and critical thinking – become purveyors of spin, image-making, manipulative marketing, organized boasting and sometimes more toxic forms of deceit. The education system as a whole comes to stand, not for the common interest and self-knowledge of the society, but for ways to extract private advantage at the expense of others (Connell, 2013, p. 106).

For neoliberals there is one form of rationality that is more powerful than any other and that is economic rationality. Efficiency and an “ethic” of cost-benefit analysis are the dominant norms in the neo-liberal agenda (Apple, 1998) with the profit-seeking corporation promoted as the admired model for the public sector, and for much of civil society too. Schemes of organization and control are imported from business to schools

and other public institutions (Canella & Bloch, 2006; Connell 2013; Angus 2015), and public institutions are required to make themselves ‘auditable’, on a model imported from business accountancy (Power, 1997). ‘Testing’ to ensure ‘standards’ and ‘value for money’ become frequently used words in policy documents. These trends have spread internationally with neo-liberalism, and have had a profound impact on education policy world-wide (Bal, Macrea & Maguire, 2000; Mahony & Hextall, 2000).

‘Value for money’ reviews have been carried out in many areas of education in Ireland in recent years, including in the provision of language support for migrant children (DES, 2011b), Special Needs Assistant (SNA) support (DES, 2011c), the Special Education Support Services (DES, 2012), Early Childhood Education (Department of Public Expenditure and Reform, 2014) and Teacher Education (DES, 2007a) to mention but a few. Evaluation of many of these services was carried out on behalf of the DES by business accountant companies. The tone of ‘value for money’ reviews differs substantially from the tone of the *Report of the International Review Panel on the Structure of Initial Teacher Education Provision in Ireland* (Sahlberg, 2012), which emphasizes the importance of ‘systematic investment’ in Initial Teacher Education (ITE) as the means to maintain quality the Irish education system.

The recently published *Action Plan for Education 2016 – 2019* (DES, 2016) has a “vision” for Ireland of providing the “best education and training system in Europe”. Although admirable, this “vision” of being the “best” suggests some method of testing, measuring and comparing Irish student performance with the performance of students in other European countries. This “vision” does not prioritise a measure of how happy, well-balanced, responsible, caring, artistic, culturally aware, or socially inclusive the students in our education systems are. Hargreaves & Shirley (2009) highlight the dangers of such testing when they point out that if we only measure our students using narrow measures,

do we risk “valuing” only what we can measure as opposed to measuring what we should value? (Hargreaves & Shirley, 2009).

Implications for Testing of ML Children

Mac Ruairc (2009) draws our attention to the fact that the now mandatory position allocated to standardized testing “aligns Irish policy more closely with international patterns” (p. 48). He cautions that if international patterns are replicated here, then there are some negative consequences for the quality of the education system and the overall educational experiences of children in the system, issues that can become sidelined in the pursuit of an agenda based on accountability and the escalation of standardised measures of educational outcomes. Gorski (2008) similarly observes that education policy that increasingly relies on the assessment of teacher and student performance on the basis of standardized test scores, results in a culture of pragmatism that dissuades theoretical or philosophical discourses among educators in favour of those focused on immediate, practical strategies.

Where there is pressure to raise standards, this pressure transfers into a focus on the individual and collective performance of children (and teachers) on standardized tests, resulting in negative repercussions for underperforming students and schools (Alford, 2014; Berliner, 2011; Cummins, 2001; Gutierrez, Zitali Moreles, & Martinez, 2009; Luxia, 2005; McNeil, 2000; Shohamy, 1997, 2001). It has also been shown to lead to what is referred to as ‘washback effect’ (Luxia, 2005, p. 164). which includes the employing of questionable pedagogical practices such as ‘teaching to the test’ due to pressure on teachers and schools to improve performance (McNeil 2000), the narrowing of curricular content to reflect test content (Berliner, 2011) and the limiting of innovation and risk taking (Williams & Ryan, 2000).

ML children are a group that has been recognized internationally as a group who may be at risk of underperformance on standardised tests (OECD, PISA, 2009, 2012, Bedore & Pēna, 2008, Cook et al., 2015, Meunier, 2010). Research indicates that tests in English have been shown to have a cultural and linguistic bias which works against ML students, with these students often needing more time to complete written tests (Gandy, 2013). ML children may also have different vocabularies in both (or many) languages (García, McKoon, & August, 2006) and although they may have good comprehension skills in their first language, they may lack sufficient proficiency in English to transfer those skills in a testing situation (Cummins, 2001; García et al., 2006).

One of the dangers associated with underperformance in tests and assessments is that it leads to ML students being labelled in assessments as ‘low achievers’ (Artiles, 1998; Artiles & Harry, 2006; Gutierrez, Zitali Moreles, & Martinez, 2009; Lyons, 2010,) or ‘problems’ (Cummins, 2001) with “children’s linguistic competencies being interpreted as devoid of English rather than as multi-lingual” (Devine, 2011, p. 99). Such ‘deficit discourse’ associated with student performance is well recognized in the literature, as damaging for all students at its receiving end (Alford, 2014; Cummins, 2001; Gutierrez, Zitali Moreles, & Martinez, 2009). Cummins (2001) asserts that ‘deficit discourse’ in relation to ML students’ highlights student underachievement, ignoring their cultures, languages and identities resulting in negative consequences for self-esteem and academic confidence. This, in turn, results in the ‘disempowering’ and ‘disabling’ of ML students and the perpetuation of inequalities and academic failure (Archer & Francis, 2007; Baker & Lynch 2005; Cummins, 1986; Gay, 2010). Teachers who experience pressure to increase standards may also fail to recognise the “funds of knowledge” (Conteh, 2012, p. 102) with which ML children come to school. Literacy, mathematical ability, knowledge and skills in the child’s first language may not be recognised in the teacher’s assessment,

as in general this knowledge is not ‘valued’ in relation to existing curricula, pedagogy and assessment practices.

The Development of Second Languages and ML Children

In September 2010, the DES and the Office of the Minister for Integration (OMI) launched the *Intercultural Education Strategy 2010-2015* (DES & OMI, 2010). This document represents the government’s overall policy statement regarding the education of children and young people from immigrant communities. Language education was one of the five key goals outlined in the strategy, the aims of which were firstly “to support students to become proficient in the language of instruction” and secondly to ensure that “migrant students are enabled to maintain a connection with their mother tongue and culture” (DES, 2010, p. 65).

Enabling students to become proficient in the language of instruction is of course vital. If students are not proficient in the language of instruction, they cannot fully access the curriculum. Education experts acknowledge that language is the key to both social integration and academic success for ML children (Council of Europe, 2009, UNESCO, 2006). It is also acknowledged that academic language proficiency is more than communicative skills developed for everyday life, it is a level of proficiency that allows successful engagement with curriculum (Cummins, 2000, 2001; EU Commission, 2008). Although acknowledged that “*academic language has to be taught and learnt deliberately*” (Council of Europe, 2009; DES, 2010, p. 46) researchers indicate that educational policies are frequently based on assumptions about the nature of ‘language proficiency’ and how long it takes to acquire academic levels of language proficiency (Cummins, 2001). A related and contentious issue concerns the validity and appropriateness of administering standardised tests to EAL students who have not had the time or opportunity to develop the academic levels of proficiency necessary for them to

have equal opportunity for success on tests and assessments (Brown, 2013; Cummins, 2001; De Angelis, 2014; Faul, 2014, Imam, & Shaw, 2013, Kane, 2016, McNamara, 2006, Messick, 1980, 1981, 2000).

Cummins (2001) explains that there are two common misconceptions regarding the nature of language proficiency. These misconceptions have implications for the way in which educators interact with culturally and linguistically diverse students. Both misconceptions have to do with the confusion between the conversational aspects of children's language and the deeper aspects of proficiency that are more closely related to conceptual and academic development (Cummins, 2001; Gibbons, 1991, Skutnabb-Kangas & Toukoma, 1976). The first misconception is that children who speak a non-standard variety of English are frequently thought to be "handicapped educationally and less capable of logical thinking" (Cummins, 2001, p. 60). Although this position has been refuted it remains as a common misconception among educators (Archer & Francis, 2007; Baker & Lynch 2005; Cummins, 1986; Delpit, 2012; Gay, 2010).

The second misconception is that conversational fluency in English is taken as a valid index of overall proficiency in the language. Research indicates that this misconception can lead teachers into believing that a child is 'sufficiently proficient' in the language of instruction to believe that academic difficulties must be attributable to a 'learning disability' or 'deficiencies' in the child themselves. Research by Cummins (1984), into the psychological assessments of 400 ML children in Canada, indicated that in many cases there was no reference to the fact that the child being assessed was from a ML background. This in turn led to a failure to include this as a factor in accounting for low verbal IQ scores. Conversely, poor academic performance may be attributed to lack of proficiency in the language of instruction resulting in a failure to recognise a learning difficulty. The literature clearly indicates that this is a world-wide issue with ML children

both over and underrepresented among children diagnosed with SEN (Artiles, 1998; Artiles, Kozleski, Trent, Osher, & Ortiz, 2010; Zhang, Katsiyannis, Ju, Roberts, 2014; Skiba et al,2006).

Cummins (2001) explains that the two common misconceptions are founded in an enormous amount of confusion about the relationship between, what he identifies as, the three levels of language proficiency; conversational fluency, discrete language skills and academic language proficiency. Many researchers indicate that it takes between five and ten years, on average, to learn a second language to grade average norms (Cummins, 2001; Gibbons, 1991; Skutnabb-Kangas & Toukoma, 1976). Meanwhile as ML children learn the language of instruction, native speakers of the language are also being instructed to ensure that their levels of language are fully developed into academic spheres. ML children must therefore “catch up with a moving target” (Cummins, 2001, p. 75). Collier & Thomas (1999), have estimated that in order to catch up to grade norms within six years, EAL students must make 15 months gain in every 10-month school year, compared to 10-month gain expected for the typical native-speaking student.

Academic language proficiency is defined as including “knowledge of less frequent vocabulary” in the language of instruction, as well as the “ability to interpret and produce increasingly complex written and oral language” (Cummins, 2001, p. 66). As they rise through the grades the levels of academic language proficiency also rise. Students “encounter more low frequency words” “complex syntax” and “abstract expressions that are virtually unheard of in everyday conversation” (Cummins, 2001, p. 66). ML children may be perceived to have, and ‘appear’ to have, good conversational skills but they may not have the academic language proficiency required for verbal IQ tests or tests that require complex manipulation of language in cognitively demanding situations such as those presented by the testing situation.

The IES (DES, 2010) highlights the importance of educators having high expectations for all their learners, irrespective of their background. Being labelled as a 'low- ability student' at an early age may lead students to internalise low expectations and lose motivation for, and interest in, education (Nusche, 2009). Students themselves must also believe that they can achieve their goals and be enabled to develop their self-belief. Being labelled as a 'low- achiever' can become a self- fulfilling prophecy (OECD, 2009). An Irish study, *Moving Up: The Experiences of First Year Students in Post-Primary Education* (ESRI & NCCA, 2004), highlighted the importance of having self-confidence to assist with a successful transition from primary to post-primary level. The study found that students with low self-confidence were at a greater risk of experiencing difficulties in making the transition. These difficulties can take time to resolve and may diminish the education experience of the student, by putting student progress and retention at risk. Consistent reporting of low scores on standardised tests will effect self-confidence and self-belief especially if your peers appear to consistently score better than you.

The IES's (DES, 2010) goal of enabling ML children to become communicatively and academically proficient in English (or Irish) and its recognition of the importance of the development of academic proficiency is accompanied by the recognition of a need for CPD for teachers. It highlights the need for CPD that supports the principal, class teachers, EAL teachers and guidance counsellors in meeting the needs of EAL students and the need to make all teachers aware of the language dimension of their role as teachers of language (DES, 2010). Unfortunately, this provision of CPD was not rolled out to include all mainstream teachers thereby failing to ensure diversity training for teachers and failing to eradicate the confusion and misconceptions around the learning of second languages and ML children.

Teachers in Ireland are traditionally teachers of a second language in that they teach Irish in English medium schools and English in Irish medium schools. Irish is a minority language for most English speaking children, is taught in a structured and supported way, is recognised as important to Irish children's culture and identity, while English is also taught and recognized as the children's first language. This situation ensures that English speaking children have the recognised benefits and opportunities of a rich additive bilingual experience. Conversely, ML children are exposed to a subtractive bilingual experience at school. As they endeavor to learn English (and Irish) to academic grade norms, they receive no instruction, or sometimes even recognition of their first language, leading to the possibility that they may lose the opportunity to develop literacy in their first language (or even the language itself). The literature on the loss of the 'mother tongue' equates it with loss of belonging, identity, relationships and family while Fennell (2004, cited in O'Toole, 2012) describes it as "gnawing feeling of lacking something" (p. 6). The second aim in the IES (2010) in relation to language and ML children is that "migrant students are enabled to maintain a connection with their mother tongue and culture" (DES, 2010, p. 65). This is a difficult aim to achieve in the subtractive bilingual situation in which we find ourselves with little official support for minority languages in schools.

Teachers, ML Children and Assessment

As discussed previously teachers and assessment of pupils are intrinsically linked. National and international literature indicates clearly, that teachers play a significant role in mediating the impact of ethnicity and language on schooling and assessment of ML children (Delpit, 2012; NCCA, 2005; DES, 2010; Devine, 2005; Gillborn & Youdell, 1998, 2000; Archer & Francis, 2007; Gay, 2010; Cummins, 1996). Research in education indicates that when teachers are culturally responsive educators they can contribute to the

empowerment of children at multiple levels through the provision of the best possible learning and assessment opportunities (Brock & Conteh, 2011; Cummins, 2000, 2001; Gay, 2010; Hawkins, 2010; Ladson- Billings, 1995).

Cummins (2001) asserts that, in spite of its frequent self-portrayal as innocent and focused only on ‘learning outcomes’, the science and practice of pedagogy is never neutral in relation to issues of diversity, identity, and power. It is through their ‘micro-interactions’ with children that teachers sketch “a triangular set of images” (Cummins, 2001, p. 319) for their pupils. These images include the image of their own identities as educators (intercultural, assimilationist), the image of the identity options for pupils (success, failure), and the image of the society for which they are being prepared (inclusive, oppressive). This “triangular set of images” has the power to create many different educational experiences for children depending on the teacher’s position in relation to diversity, identity, and power with some teachers implicated in the “production of *under*-achievement among minority ethnic pupils” (Archer & Francis (2007), p. 41).

Devine (2011) indicates that she has found that “teacher estimations of children’s ability/ performance are not unproblematic” (p. 43) with a body of research (Devine 2005; Lyons 2010; Mc Daid 2009) finding that teachers in Ireland have “consistently been identified as holding ‘deficit’ assumptions of the abilities of migrant children who are not fluent in English” (Devine, 2011, p. 43). Conversely, Devine (2011) also reports that “great commitment and passion exists among many teachers to the care and well-being of children from immigrant communities” (p. 162) in Irish schools. The experiences of ML children are therefore obviously influenced by the attitudes and values of the teachers with whom they interact at school.

Test Validity and Ethics in Assessment.

Validity is the hallmark of quality for educational and psychological measurement and is the most fundamental consideration in developing and evaluating tests (Imam & Shaw, 2013, p. 453). Validity relies on test scores having the same meaning and consequences across different population groups (American Educational Research Association [AERA], 1999; Elwood, 2006, 2013; Kane, 2001; Messick, 2000; McNamara, 2006) regardless of ethnicity, gender or class. Messick (1980, 1981) suggests that whenever a test is proposed for a particular use or purpose then two questions need to be asked; (i) is the test any good as a measure of the characteristics that it is interpreted to assess? and (ii) should the test be used for the proposed purpose in the proposed way?

Elwood (2013) explains that the first question is a technical and scientific one while the second question is an ethical one. The ethical question requires the consideration of the potential social consequences of testing and whether, in light of the potential consequences of the particular test for particular groups, it might be better not to test at all. Elwood (2013) explains that Messick (1980, 1981) infers that values pervade test development, that it is not a neutral practice, and that these values can influence interpretations of tests in both subtle and not so subtle ways. McNamara (2006) states that testing is a procedure for drawing inferences about the unobservable; it is necessarily indirect and uncertain, that tests are procedures for gathering evidence and the interpretation of what this means is based on a judgment which has its roots in values. The interpretation offered by the test maker is uncertain and is therefore open to reinterpretation based on other evidence available to the tester/teacher. According to De Angelis (2014), focus on test results and numerical data from testing alone is an oversimplification of the testing experience and leads educators and teachers away from

pedagogical discourse regarding alternative interpretations. This may result in a misinterpretation of what the test result means.

If a student gets a high score then it is legitimate to infer that the student has a good knowledge, understanding and skills in the content area under examination in the test, however, if the “language used by the test is inaccessible to candidates with limited English proficiency, then claims of test validity and test fairness may be subject to challenge” (Imam & Shaw, 2013, p. 453). Similarly, if the test method is shown to have gender bias (Elwood, 2013; Gipps & Murphy, 1994; Willingham & Cole, 1997) or bias associated with ethnicity (Archer & Francis, 2007; Gay, 2010; Gipps and Murphy, 1994)) or social class (Cooper & Dunne, 2000; Mac Ruairc, 2009) then the validity and fairness of the test is also open to challenge. Fairness has been described as a complex concept (Camilli, 2006) but has been defined by the AERA “as an absence of bias, equitable treatment of all candidates throughout the testing process and equity in opportunity to learn the material in an achievement test” (Imam & Shaw, 2013, p. 454).

The use of standardized tests in English on linguistically diverse populations raises issues relating to assessment validity and fairness (Archer & Francis, 2007; Cummins, 1996, 2001; Elwood and Lundy, 2010; Gay, 2010; Imam & Shaw, 2013). Research indicates that English language proficiency levels, gender, ethnicity and culture all interact with the testing process. Consideration of the implications of these conditions on test performance becomes an ethical issue for teachers particularly when considering any social consequences of testing and test performance such as loss of confidence or self-belief, or being labelled or perceived as a ‘low-achiever’.

Elwood (2013) warns that “ethics is a complicated matter” (p. 206). “Early positions within the study of ethics considered that ethics judgments were based on the infallible and simple intuitive knowledge of what things were good and that moral

decision based on two possible courses of action must be based on what would bring about good things” (Elwood, 2013, p. 206). If tests or the testing processes are unfair and are shown to have potential negative consequences for certain groups, then we must question test validity, look for alternative interpretations of test results, consider whether the test should be carried in circumstances that are more sensitive to the needs of the group, or whether it is better that the tests are not carried out at all. As teachers, we must resist a culture of pragmatism and find time for the philosophical and theoretical discourses which would allow us to critically examine and question our assessment policies and practices from a moral and ethical perspective.

Conclusion

It seems unlikely that standardized testing will disappear from education policy anytime soon, despite much criticism from scholars. Standardized testing remains the only viable option in many countries, for the gathering of information on their education systems (De, Angelis, 2014).

Increasing focus on ‘standards’ and ‘value for money’ have meant that aggregated data from standardized testing is used to inform future policy decisions and investment in education systems. It is therefore important that the results of standardized tests would provide accurate and reliable information to policy makers. Simplistic numerical data cannot provide valid and accurate information alone. There is enough research in the area of standardized assessment to indicate that bias exists in tests and testing procedures, despite efforts to eliminate it and therefore misrepresenting some groups and challenging their rights to equality (Cooper & Dunne, 2000; Cummins, 2001; Devine, 2005, 2013; Elwood 1998, 2006; Eivers et al., 2010; García, G. E., McKoon, G., & August, D., 2006; Gipps & Murphy, 1994; Ladson-Billings, 1995; Shohamy, 1997).

The IES (2010) outlines the important goals of developing the language of instruction to academic levels and of enabling ML children to maintain a connection with their mother tongue and culture. These goals present teachers with challenges that require the provision of CPD. Awareness of the complexities involved in the development of second languages and the powerful position held by teachers in the provision of positive educational experiences for ML children has to be recognized by teachers themselves in order for them to effect change, ensure equality, fairness and validity in the assessment of ML children on standardised tests.

In Chapter Three of this dissertation I describe the methodology used to gather and organize data for the study. Discussion and analysis of the results are contained in Chapter Four.

Chapter Three: Methodology

Introduction

Chapter Three outlines the key steps that were followed in undertaking this study. It explains the rationale behind the research paradigm chosen and the ethical issues associated with the study. This chapter also describes in detail the research design, including the research aims, site, sample, and methods used to gather data for the study. This chapter concludes with a description of the statistical tests used in the study.

This study involved the statistical examination of the standardised test scores of five cohorts of children as they progressed through a primary school from 1st class to 6th class. Each cohort was divided into two groups, EAL and Non-EAL, and the performances of the two groups were compared. All groups were similar in terms of age and class level, and were mixed in terms of gender, however the EAL sample was smaller on each occasion. Potential variables such as socio-economic status and ethnicity were not considered at the time of this study as such details were not available at the time of the study.

The raw data from the two groups were compared using a software package called Statistical Package for Social Sciences (SPSS). Raw data were uploaded and SPSS was used to calculate both descriptive statistics (N , Mean, Standard Deviation & Standard Error Mean) for each group, on each test, in each cohort and inferential statistics for each test when the groups were compared for difference in performance (t -test). The expertise of a statistician was employed to advise on the choices and uses of suitable statistical analysis tools.

Critical Inquiry Paradigm

A paradigm is a way of looking at or researching phenomena, a world view, a view of what counts as accepted or correct scientific knowledge among communities of scholars

(Cohen, Manion & Morrison, 2011). In this study I used quantitative methods to organise and examine data. Quantitative methods traditionally belong to the positivist paradigm. Positivism has been a recurrent theme in the history of western thought from the Ancient Greeks to the present day and is historically associated with the French philosopher, Auguste Comte. Positivism relies on the scientific method and “strives for objectivity, measurability, predictability, controllability, patterning, the construction of laws and rules of behaviour, and the ascription of causality” (Cohen, Manion & Morrison, 2011, p. 31).

Assumptions of the scientific method include determinism, empiricism, parsimony and generality. Determinism means that events have causes, and science proceeds on the belief that these causal links can be uncovered and understood with the ultimate aim of formulating laws to account for the happenings in the world, thus giving scientists a firm basis for prediction and control. Empiricism means that there is data yielding proof or strong confirmation, in probability terms, of a theory or hypothesis in a research setting. Parsimony implies that phenomena should be explained in the most economical way possible. Finally, generality means that scientists set out to generalize their findings to the world at large. This concept of generality presents much less of a problem to natural scientists working chiefly with inanimate matter than to human scientists who, of necessity having to deal with samples of the larger human population, have to exercise great caution when generalising their findings to the particular parent population. Ultimately the aim of science is the formulation of theory (Cohen, Manion & Morrison, 2011). In this study I am inquiring to see if there is empirical evidence to support the theory that EAL children do not have the language proficiency levels necessary to ensure equal opportunity for success on standardised tests.

The organisation and analysis of large amounts of raw data in the form of standardised test results required the use of positivist, quantitative methods . However, the

intention of this study was not merely to give a statistical account of the performance of each group of children on the tests, but was to make a critical inquiry into the comparative performance of the groups in the hope of realizing an assessment process that is based on equality of opportunity and justice for all children.

This research is therefore deeply rooted in Critical Theory or critical educational research, the aim of which is to challenge discrimination if it is shown to exist from an examination of the data.

In this respect the purpose of critical educational research is intensely practical and political, to bring about a more just, egalitarian society in which individual and collective freedoms are practiced, and to eradicate the exercise and effects of illegitimate power” (Cohen, Manion & Morrison, 2011, p. 32).

In using quantitative methods to organise and present data and Critical Theory to investigate and interpret the statistical findings the research project might be more accurately described as Critical Quantitative Inquiry (Stage & Wells, 2014). This term is used to describe research that uses quantitative data to represent educational processes and outcomes to reveal inequities and to identify social or institutional perpetuation of systematic inequalities in processes and outcomes (Stage, 2007). This study is aimed at discovering empirical evidence to support anecdotal evidence that EAL children who ‘appear proficient in English’ are denied their rights to equality and non-discrimination in standardised tests, which require levels of language proficiency in English, that they may not have had the time or opportunity to develop prior to testing.

Ethics.

Ethical issues in this study mainly stemmed from ensuring permissions to proceed with the study and issues around data protection at each stage in the research. However, a more subtle ethical issue needed to be reflected upon before embarking on the study. This ethical issue stemmed from the possible, if unlikely, negative consequence of highlighting a pattern of statistically significant underperformance by EAL children as a group on

standardised tests. Could such a situation result in the ‘problematizing’ of the performance of the EAL children on standardised tests, could it result in ‘lack of proficiency in English’ being identified as a ‘problem’ within the child themselves? Countering this concern was the position that this study could dissipate some of the confusion around levels of language proficiency among EAL children and highlight the need to better support EAL children in the pursuit of higher levels of academic language proficiency by focusing attention on the need to teach and learn academic language. It could also focus attention on issues of equality in testing ultimately leading to more positive experiences and better outcomes for children.

Within the study of ethics, it is considered that ethics judgments are based on the “infallible and simple intuitive knowledge of what things are good and that a moral decision based on two possible courses of action must be based on what would bring about good things” (Elwood, 2013, p. 206). The choice to proceed with the study was therefore based on an ethical judgement around what course of action would bring about the greater good. Revealing the possibility that EAL children were being misrepresented by the standardised tests, were possibly being denied their rights to equality in assessment, and bringing focus onto allowing them time and opportunity to develop sufficient levels of language proficiency in English prior to testing, in my judgment, outweighed the possibility of other negative consequences of proceeding with the study. This judgement was based on the considered opinion of what was in the best interests of the present and future EAL children in the school. Ethical permission for this study was also approved by the Ethics Committee at Marino Institute of Education, Dublin.

Procedural ethical issues included the receipt of permission to proceed with the study from the Principals of both Junior and Senior Schools. The study was explained to both principals individually and permission was granted (see Appendix A & B). Data

protection issues were initially of concern for the Senior School, as the researcher was not a teacher in that school. However, following additional consultation on data protection, it was decided to allow the research to continue on condition that the names and personal details of Non-EAL children were redacted. EAL children could be tracked, in line with the Literacy and Numeracy Strategy 2011-2020 (DES, 2011) which urges schools to monitor aspects of student learning, to inform school self-evaluation processes and to track the achievement of groups of students at risk of underperformance. As I was the EAL teacher in the junior part of the school, it was deemed appropriate to grant permission to continue with the study in the senior school so that our EAL pupil's progress could be tracked throughout their primary school years. This decision was taken by the senior school principal in the best interests of the present and future EAL children in the school.

The findings of the study, once written up, were presented to both principals to ensure that they were happy to allow the study to continue to completion. Both principals were happy to allow the study to proceed.

Research Design

This aim of this study was to critically examine the comparative performances of EAL and Non-EAL groups of children on standardised tests of ability (NRIT/NNRIT & NVRT) and standardised tests of literacy and numeracy, in five cohorts of children, over a six year period, from 1st class to 6th class in a primary school. Throughout this study the mean standard scores for each group were used to compare for difference. The research design was governed by the research questions. The longitudinal and broad nature of this comparative study allowed the researcher to establish;

1. if there were statistically significant differences between the performances of the EAL and the Non-EAL groups, on each test, in each cohort.

2. if there was evidence to suggest that the EAL groups were disadvantaged by their levels of language proficiency in any of the tests.
3. if changes were required to policy and practice in relation to the assessment of EAL children.

This study was carried out in a junior school and senior school who share a campus in North County Dublin. The schools are large, Catholic, suburban, mixed, primary schools and are located in the middle of a large, suburban, mature housing estate. The wider area beyond the immediate environs of the schools includes many newer houses and apartments. The catchment area for the schools is defined by the local parish boundaries and it is from this parish that pupils are drawn. The large majority of the children in the sample lived in the catchment area.

Presently there are six classes at each level of the Junior School, from junior infants to second class. There are over 40 teachers in the Junior School and a total population of approximately 700 pupils. The staff includes a Principal, 24 class teachers, 13 support teachers, two EAL teachers and 6 SNAs. The children from the Junior School traditionally transfer to the Senior School after 2nd class having spent four years in the Junior School. The children spend another four years in the Senior School before transferring to secondary school. The Senior School is similar in size to the Junior School. The Senior School also has two Reading Classes for children who have been diagnosed with Dyslexia. In the years from which the sample was drawn there were either five or six classes enrolled in each cohort.

Sample

The sample for this study was made up of the five cohorts of children. The cohorts included the full population of children who started school in Junior Infants in each of the years 2006, 2007, 2008, 2009 and 2010 and small numbers of children who enrolled later

into these cohorts ($N = 130 - 161$ per cohort). Each cohort was divided into two groups; EAL and Non-EAL, (see Table 1 for values of N per cohort).

The EAL groups consisted of those children who were identified at enrolment by their parents, as children who spoke a language other than English at home, and who were subsequently assessed as being in need of English language support during their first four years at school, ($N = 24 - 53$), (see Table 1). Length of EAL support varied among the EAL groups from 1 to 4 years, and was determined variously, by DES language support policies, proficiency levels in English as measured on The Primary School Assessment Kit (PSAK), and length of attendance in the school. The Non-EAL groups consisted of the children who spoke English as a first language and also included all children who enrolled after third class ($N = 82 - 115$), (see Table 1).

It is important to note that each EAL group, in each cohort of the sample, refers to the same children initially identified as EAL candidates in the Junior School. No new EAL children were included in these EAL groups once they left the Junior School. This was to ensure that the EAL children, initially identified as children who were in need of EAL support, were fully tracked throughout their school years from enrolment in the Junior School up until they left the Senior School in sixth class.

The EAL population varied over the research period but was consistently made up of between approximately twenty and thirty percent of each cohort in each of the of the enrolment years of the study, 2006, 2007, 2008, 2009, 2010. The children spoke a variety of languages at home and their parents had migrated to Ireland from over 40 different countries. These children are presently in 3rd year, 2nd year and 1st year of secondary school, and 6th and 5th classes in the senior primary school respectively.

Table 1.*N for each EAL and Non-EAL Group on each Test for each Cohort*

Cohort	GRP.	1st NRIT	2nd NRIT	NVRT	Lit 1st	Lit 2nd	Lit 3rd	Lit 4th	Lit 5th	Lit 6th	Num1st	Num2nd	Num3rd	Num4th	Num5th	Num6th
2006	EAL	N=(37)	N=(37)	N=(37)	N=(39)	N=(40)	_____	N=(38)	N=(35)	N=(29)	N=(39)	N=(40)	_____	N=(37)	N=(35)	N=(30)
	Non-EAL	N=(93)	N=(90)	N=(88)	N=(91)	N=(82)	_____	N=(82)	N=(93)	N=(93)	N=(89)	N=(82)	_____	N=(85)	N=(93)	N=(93)
2007	EAL	N=(33)	N=(29)	N=(29)	N=(33)	N=(34)	N=(29)	N=(29)	N=(26)	N=(24)	N=(33)	N=(34)	N=(30)	N=(28)	N=(26)	N=(24)
	Non-EAL	N=(102)	N=(106)	N=(106)	N=(101)	N=(102)	N=(100)	N=(100)	N=(101)	N=(105)	N=(104)	N=(103)	N=(99)	N=(99)	N=(102)	N=(106)
2008	EAL	N=(51)	N=(49)	N=(49)	N=(52)	N=(53)	N=(49)	N=(43)	N=(37)	N=(34)	N=(50)	N=(53)	N=(49)	N=(45)	N=(38)	N=(34)
	Non-EAL	N=(108)	N=(112)	N=(112)	N=(107)	N=(107)	N=(102)	N=(102)	N=(101)	N=(103)	N=(105)	N=(108)	N=(101)	N=(101)	N=(101)	N=(102)
2009	EAL	N=(42)	N=(38)	N=(37)	N=(42)	N=(42)	N=(33)	N=(33)	N=(33)	_____	N=(42)	N=(40)	N=(33)	N=(33)	N=(33)	_____
	Non-EAL	N=(94)	N=(95)	N=(95)	N=(90)	N=(91)	N=(92)	N=(95)	N=(95)	_____	N=(90)	N=(91)	N=(92)	N=(95)	N=(95)	_____
2010	EAL	N=(42)	N=(35)	N=(36)	N=(41)	N=(39)	N=(31)	N=(34)	_____	_____	N=(41)	N=(39)	N=(35)	N=(35)	_____	_____
	Non-EAL	N=(93)	N=(102)	N=(115)	N=(96)	N=(102)	N=(104)	N=(103)	_____	_____	N=(95)	N=(103)	N=(103)	N=(102)	_____	_____

Those children who enrolled in the school later in their education, from third class on, were included in the Non-EAL group. This implies that the Non-EAL group means, in each cohort, may actually include the results of some later enrolled EAL children. Due to data protection issues, these children could not be identified as EAL children, as background information on these children was not available to this researcher at this time. This situation ensured that the EAL groups in each cohort remained constant as they progressed through the school unless individual children left the school. The numbers of children varied in each part of the research due to the nature of schools, with some children leaving the school, some children moving into the school, and some children absent on the day of testing. In each set of tests *N* varies for each group for these reasons (see Table 1).

Methods

The data for this research project were garnered from the standardised test results of the sample, described above as the 2006, 2007, 2008, 2009 and 2010 Cohorts, as they progressed through the school. The data were harvested from historical school records

held on file in the schools and were comprised of the standardized test results of the children when they were in 1st, 2nd, 3rd, 4th, 5th and 6th classes. The results included results of standardised tests of literacy (Micra-T) and of numeracy (Sigma-T) for each class level, the results of standardized tests of general ability (NRIT /NNRIT) at 1st class level and at either 3rd, 4th, or 5th class levels, and the results of standardised tests of non-verbal reasoning (NVRT) at 3rd, 4th or 5th class level.

Once identified in their individual class results file, the EAL children were separated as a group from the 'Non EAL' children. Their names, gender, country of origin, and the standard score of each of the Literacy, Numeracy, NRIT/NNRIT and NVRT for the years from 1st to 6th class were coded and recorded. The coded data were uploaded onto an Excel worksheet to aid statistical analysis.

The results of the Non-EAL children were then gathered and organised. The results of the Non-EAL children were gathered as a list of standardised scores only, for each of the standardised tests in the years already outlined above. The data set allowed for comparisons between both groups of children. Detailed data on the identity and gender of the Non-EAL children was not available to the researcher at the time of the study for reasons of data protection, as the researcher was not a teacher of this group of children.

The results gathered were in the form of standard scores only. Literacy scores were recorded as age related scores. NRIT/NNRIT and NVRT scores are also age related. Numeracy scores are class based only. Standard scores were not available for one cohort (2006 cohort) in literacy and numeracy, when they were in 3rd class in May 2011, as percentiles were used to record scores in that year.

Number of years spent attending EAL classes in the Junior School was also recorded and this ranged from 1 to 4 years. This information was used in the analysis and discussion of the findings of the research and is represented in pie-charts in the appendices

(see Appendix C). As there was no permanent EAL teaching position in the Senior School, the EAL children, in general, may not have received specific EAL teaching once they left the Junior School, however, they may have received learning support and differentiated mainstream support. A natural interest in the progress of EAL pupils prompted informal monitoring of their progress through their senior school years. This was enabled through informal inquiry and conversation with teachers in the Senior School. The standardised test results of EAL children in the junior school are examined during and after attendance at EAL classes as a means of monitoring progress, assessing needs for extra or continued support and also as a means of ensuring that “assessments are carried out in circumstances that are appropriate for children from minority language backgrounds” (NCCA, 2007, p. 96).

Quantitative methods were used to gather, organise and analyse the large amounts of numerical data in this study. The data used in this research were the standard scores of each child, in each cohort in the sample, on each test as mentioned above. The expertise of a statistics tutor was employed to advise on the choices and uses of suitable statistical analysis tools.

Once harvested, raw data were organised, coded and initially uploaded onto Excel worksheets. Data were subsequently transferred into SPSS to aid statistical analysis and comparison. SPSS is the most widely used statistical package for the social sciences (Cohen, Mannion & Morrison, 2011). It was decided that the *t*-test for independent samples was the most appropriate statistical analysis tool for use in this study. Two tables of output were produced for each independent *t*-test that was run. The first was the group statistics table and that gave important descriptive statistics (*N*, Mean, Standard Deviation & Standard Error Mean) for each group, on each test, in each cohort (see Appendix D),

and the second was the table that gave inferential statistics (values of t , the degrees of freedom (df), and the associated statistical significance (Sig. [2-tailed]) (see Appendix E).

“The larger the t value (irrespective of the sign) the greater the difference between the groups” (Dempster & Hanna, 2012, p. 273).

Conclusion

Chapter Three provided an outline of the key steps that were followed in undertaking this study. It explained the rationale behind the research paradigm chosen and the ethical issues associated with the study. This chapter also described in detail the research design including the research aims, site, sample, and methods used to gather data for the study. The statistical results of the study are presented in the next chapter, Chapter Four.

Chapter Four: Results

Introduction

As mentioned above this study examined the standardized test results of five cohorts of children as they progressed through a primary school from 1st class to 6th class. Each cohort was divided into two groups, EAL and Non-EAL, and the results of both groups on each standardised test were compared for difference. This chapter outlines the results of the study.

SPSS (Statistical Package for the Social Sciences) was used to generate mean scores for each of two groups, EAL and Non-EAL, in each of the five cohorts, on each standardized test. As outlined above, the *t*-test for independent samples calculated the difference between the mean scores of the groups and revealed if there is a statistically significant difference between the performance of the groups on each test. The findings are outlined below. The performance of each cohort is displayed using charts, Figures 1 - 14. Tables (1-4) provide further details regarding mean scores (*M*), standard deviations (*SD*), numbers in each sample (*N*), and the differences between the groups (*t*) on each test. Figure 14 presents the *t* values as table.

NRIT and NNRIT

The NRIT, (1989), Levels 1 - 3 are group administered verbal intelligence tests. These tests provided an Intelligence Quotient (IQ) for children (NRIT, 1989, p. 26 -33), between the ages of 6 years and 4 months and thirteen years and eleven months. Quotients were calculated based on the raw score achieved by the child on the test and on the age of the child at the time of testing. The NRIT, (Young, 1989), Levels 1 - 3 were revised and re-standardised during 2011, and were renamed as the NNRIT (Young & McCarthy, 2012). Schools across Ireland cooperated in the standardisation of the NNRIT (2012, p.

48). The NNRIT (2012) is the updated version of the NRIT (1989), and has replaced the original NRIT (1989) in schools across the country.

In this study, the *t*-test for independent samples indicated that the mean scores of the EAL groups on the NRIT / NNRIT were either statistically significantly lower (on nine out of the 10 occasions) or were lower (on one out of the 10 occasions) than the mean scores of the Non-EAL groups on the 10 occasions examined, see Figures 1& 2.

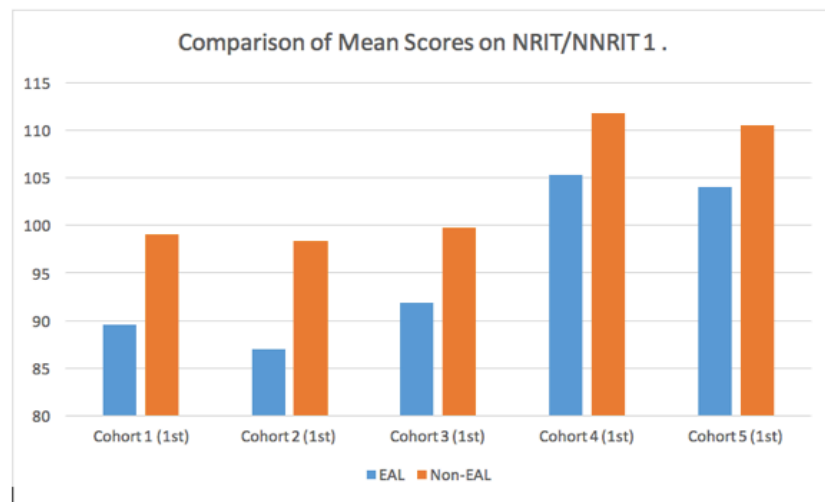


Fig. 1- Comparisons between the EAL and Non-EAL groups on the NRIT/NNRIT 1 in first class.

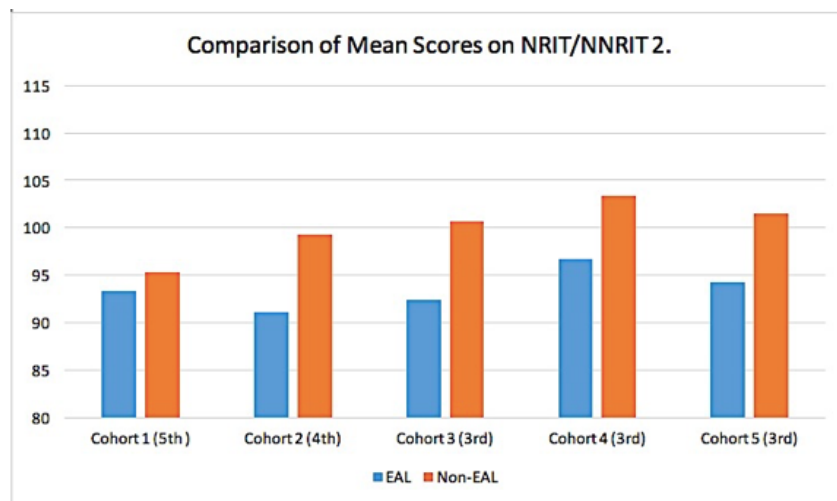


Fig. 2- Comparisons between the EAL and Non-EAL groups on the NRIT/NNRIT 2, in fifth, fourth or third class.

When the 2006 Cohort were tested on the NRIT in 1st Class in May 2009 the mean score of the EAL group ($M = 89.57$, $SD = 8.52$) was statistically significantly lower (*t*

(128) = 4.57, $p < .001$) than the mean score of the Non-EAL group on the same test ($M = 99.08$, $SD = 11.44$). When tested again on the NRIT in 5th Class in September 2012 the mean score of EAL group ($M = 93.32$, $SD = 8.39$) was lower ($t(125) = 1.34$, $p = .182$) than the mean score of the Non-EAL group ($M = 95.36$, $SD = 7.47$). This was the only occasion on which the EAL mean was not statistically significantly lower than the Non-EAL mean in this study. (see Figures 1 & 2, & Table 2).

When the 2007 Cohort were tested on the NRIT in 1st Class in May 2010 the mean score of the EAL group ($M = 86.97$, $SD = 8.90$) was statistically significantly lower ($t(133) = 5.56$, $p < .001$) than the mean score of the Non-EAL group on the same test ($M = 98.39$, $SD = 10.66$). When tested again on the NRIT in 4th class in September 2012, the mean score of the EAL group ($M = 91.07$, $SD = 9.56$) was again statistically significantly lower ($t(133) = 4.18$, $p < .001$) than the mean score of the Non-EAL children on the same test ($M = 99.32$, $SD = 9.38$) (see Figures 1 & 2, & Table 2).

When the 2008 Cohort were tested on the NRIT in 1st Class in May 2011 the mean score of the EAL group ($M = 91.86$, $SD = 10.05$) was statistically significantly lower ($t(157) = 4.74$, $p < .001$) than the mean score of the Non-EAL group on the same test ($M = 99.69$, $SD = 9.56$). When tested again on the NRIT in 3rd class in September 2012, the mean score of the EAL group ($M = 92.35$, $SD = 12.11$) was again statistically significantly lower ($t(159) = 4.66$, $p < .001$) than the mean score of the Non-EAL group on the same test ($M = 100.64$, $SD = 9.57$) (see Figures 1 & 2, & Table 2)

When the 2009 Cohort were tested on the NNRIT in 1st Class in May 2012 the mean score of the EAL group ($M = 105.26$, $SD = 16.16$) was statistically significantly lower ($t(134) = 2.34$, $p = .021$) than the mean score of the Non-EAL group on the same test ($M = 111.77$, $SD = 14.46$). When tested again on the NNRIT in 3rd class in September 2013, the mean score of the EAL group ($M = 96.71$, $SD = 17.39$) was again statistically

significantly lower ($t(131) = 2.12, p = .038$) than the mean score of the Non-EAL group on the same test ($M = 103.35, SD = 13.08$) (see Figures 1 & 2, & Table 2).

When the 2010 Cohort were tested on the NNRIT in 1st Class in May 2013 the mean score of the EAL group ($M = 104.07, SD = 13.18$) was statistically significantly lower ($t(132) = 2.51, p = .013$) than the mean score of the Non-EAL children on the same test ($M = 110.55, SD = 13.99$). When tested again on the NNRIT in 3rd class in September 2014, the mean score of the EAL group ($M = 94.29, SD = 15.88$) was again statistically significantly lower ($t(135) = 2.55, p = .012$) than the mean score of the Non-EAL group on the same test ($M = 101.48, SD = 13.90$) (see Figures 1 & 2, & Table 2).

Table 2

Statistically Significantly Lower Mean Scores for EAL groups on NRIT Highlighted in Red

COHORT	GRP.	NRIT 1	NRIT 2	NVRT	LIT 1	LIT 2	LIT 3	LIT 4	LIT 5	LIT 6	MATH 1	MATH 2	MATH 3	MATH 4	MATH 5	MATH 6
2006	EAL	89.57 1 st	93.32 5 th	107.62	102.10	97.90	_____	94.61	93.06	96.10	95.56	95.98	_____	100.41	103.37	102.33
	NON-EAL	99.08 1 st	95.36 5 th	105.81	104.88	104.76	_____	103.52	100.68	103.11	99.98	100.34	_____	105.45	108.34	106.24
2007	EAL	86.97 1 st	91.07 4 th	100.10	98.79	97.12	98.48	92.34	90.15	97.42	87.27	91.88	98.60	100.29	101.81	106.33
	NON-EAL	98.39 1 st	99.32 4 th	104.08	104.99	106.75	106.16	104.11	102.44	104.49	96.89	100.75	104.05	107.14	105.13	105.30
2008	EAL	91.86 1 st	92.35 3 rd	99.82	100.12	99.81	98.69	95.88	96.22	97.59	95.64	98.45	101.65	101.98	103.26	103.29
	NON-EAL	99.69 1 st	100.64 3 rd	101.96	103.82	106.73	105.48	107.87	103.89	108.02	102.51	105.13	104.06	106.93	104.14	107.06
2009	EAL	105.26 1 st	96.71 3 rd	107.68	109.24	106.52	105.42	100.09	97.97	_____	104.86	110.63	108.85	110.94	108.27	_____
	NON-EAL	111.77 1 st	103.35 3 rd	103.32	108.32	109.27	108.34	105.20	103.92	_____	106.59	110.63	106.80	106.43	105.34	_____
2010	EAL	104.07 1 st	94.29 3 rd	108.14	111.07	106.18	107.23	101.71	_____	_____	105.59	107.13	109.49	110.29	_____	_____
	NON-EAL	110.55 1 st	101.48 3 rd	104.37	109.82	109.75	107.56	105.83	_____	_____	106.91	107.45	106.76	107.56	_____	_____

Note: EAL scores are statistically significantly lower on 9 out of 10 occasions

NVRT

In this study the mean scores of the EAL group did not differ statistically significantly from that of the Non-EAL group on four out of five occasions that they were tested on the NVRT (Non Verbal reasoning Test). On the one occasion that there was a

statistically significant difference, the mean score of the EAL group (M = 107.68, SD = 10.84) was statistically significantly higher ($t(130) = 2.07, p = .041$) than the mean score of the Non-EAL group (M = 103.32, SD 10.90) (see Figure 3 & Table 3).

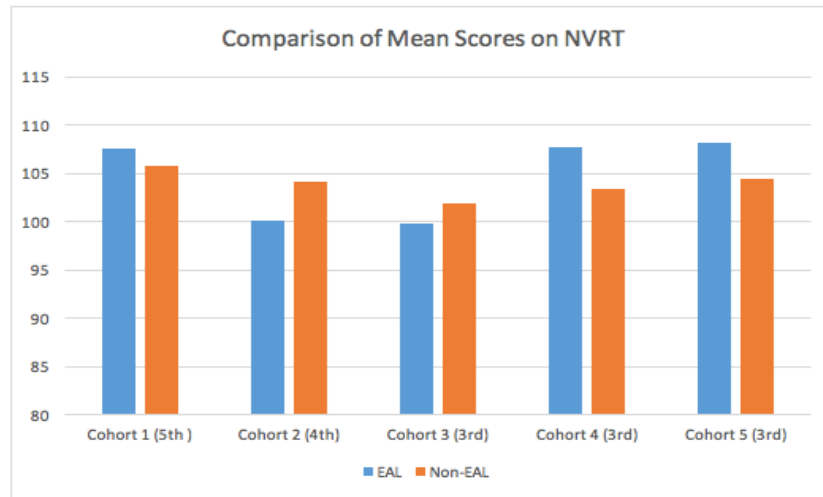


Fig. 3 – Comparison of mean scores of EAL and Non-EAL groups on NVRT

Table 3

M', N' and 't' values for all Cohorts on all Tests.

COHORT	GRP.	NRIT 1	NRIT 2	NVRT	LIT 1	LIT 2	LIT 3	LIT 4	LIT 5	LIT 6	MATH 1	MATH 2	MATH 3	MATH 4	MATH 5	MATH 6
2006	EAL	89.57 N=(37)	93.32 N=(37)	107.62 N=(37)	102.10 N=(39)	97.90 N=(40)	—	94.61 N=(38)	93.06 N=(35)	96.10 N=(29)	95.56 N=(39)	95.98 N=(40)	—	100.41 N=(37)	103.37 N=(35)	102.33 N=(30)
	NON-EAL	99.08 N=(93)	95.36 N=(90)	105.81 N=(88)	104.88 N=(91)	104.76 N=(82)	—	103.52 N=(82)	100.68 N=(93)	103.11 N=(93)	99.98 N=(89)	100.34 N=(82)	—	105.45 N=(85)	108.34 N=(93)	106.24 N=(93)
	t (N)	r(128) = -4.572	r(125) = 1.343	r(123) = .627	r(128) = 1.085	r(120) = 2.908	—	r(119) = 3.872	r(126) = 3.781	r(120) = 3.495	r(126) = 1.738	r(120) = 1.683	—	r(120) = 1.750	r(126) = 1.824	r(121) = 1.385
2007	EAL	86.97 N=(33)	91.07 N=(29)	100.10 N=(29)	98.79 N=(33)	97.12 N=(34)	98.48 N=(29)	92.34 N=(29)	90.15 N=(26)	97.42 N=(24)	87.27 N=(33)	91.88 N=(34)	98.60 N=(30)	100.29 N=(28)	101.81 N=(26)	106.33 N=(24)
	NON-EAL	98.39 N=(102)	99.32 N=(106)	104.08 N=(106)	104.99 N=(101)	106.75 N=(102)	106.16 N=(100)	104.11 N=(100)	102.44 N=(101)	104.49 N=(105)	96.89 N=(104)	100.75 N=(103)	104.05 N=(99)	107.14 N=(99)	105.13 N=(102)	105.30 N=(106)
	t (N)	r(133) = -5.555	r(133) = 4.182	r(133) = 1.523	r(133) = 2.352	r(134) = 4.210	r(127) = 3.176	r(127) = 4.057	r(125) = 5.817	r(127) = 2.433	r(135) = 4.125	r(135) = 3.389	r(127) = 2.117	r(125) = 2.433	r(126) = 1.133	r(128) = .298
2008	EAL	91.86 N=(51)	92.35 N=(49)	99.82 N=(49)	100.12 N=(52)	99.81 N=(53)	98.69 N=(49)	95.88 N=(43)	96.22 N=(37)	97.59 N=(34)	95.64 N=(50)	98.45 N=(53)	101.65 N=(49)	101.98 N=(45)	103.26 N=(38)	103.29 N=(34)
	NON-EAL	99.69 N=(108)	100.64 N=(112)	101.96 N=(112)	103.82 N=(107)	106.73 N=(107)	105.48 N=(102)	107.87 N=(102)	103.89 N=(101)	108.02 N=(103)	102.51 N=(105)	105.13 N=(108)	104.06 N=(101)	106.93 N=(101)	104.14 N=(101)	107.06 N=(102)
	t (N)	r(157) = -4.736	r(159) = 4.656	r(159) = 1.008	r(157) = 1.736	r(158) = 3.174	r(149) = 3.171	r(143) = 5.163	r(136) = 2.988	r(135) = 3.734	r(153) = 2.877	r(159) = 2.855	r(148) = .279	r(144) = 1.741	r(137) = .315	r(134) = 1.224
2009	EAL	105.26 N=(42)	96.71 N=(38)	107.68 N=(37)	109.24 N=(42)	106.52 N=(42)	105.42 N=(33)	100.09 N=(33)	97.97 N=(33)	—	104.86 N=(42)	110.63 N=(40)	108.85 N=(33)	110.94 N=(33)	108.27 N=(33)	—
	NON-EAL	111.77 N=(94)	103.35 N=(95)	103.32 N=(95)	108.32 N=(90)	109.27 N=(91)	108.34 N=(92)	105.20 N=(95)	103.92 N=(95)	—	106.59 N=(90)	110.63 N=(91)	106.80 N=(92)	106.43 N=(95)	105.34 N=(95)	—
	t (N)	r(134) = 2.336	r(131) = 2.396	r(130) = 2.067	r(130) = .349	r(131) = 1.303	r(123) = 1.281	r(126) = 1.824	r(126) = 2.206	—	r(130) = .687	r(129) = .001	r(123) = .696	r(126) = 1.445	r(126) = .928	—
2010	EAL	104.07 N=(42)	94.29 N=(35)	108.14 N=(36)	111.07 N=(41)	106.18 N=(39)	107.23 N=(31)	101.71 N=(34)	—	—	105.59 N=(41)	107.13 N=(39)	109.49 N=(35)	110.29 N=(35)	—	—
	NON-EAL	110.55 N=(93)	101.48 N=(102)	104.37 N=(115)	109.82 N=(96)	109.75 N=(102)	107.56 N=(104)	105.83 N=(103)	—	—	106.91 N=(95)	107.45 N=(103)	106.76 N=(103)	107.56 N=(102)	—	—
	t (N)	r(132) = 2.512	r(135) = 2.546	r(149) = 1.728	r(135) = .539	r(139) = 1.728	r(133) = .147	r(135) = 1.652	—	—	r(134) = .557	r(140) = .122	r(136) = .967	r(135) = .888	—	—

Note- stat. sig. lower scores by EAL groups in red & stat. sig. higher scores by EAL groups in green for all tests.

Table 4

Statistically Significantly Lower Scores on Literacy Tests by EAL Groups Highlighted in Red

COHORT	GRP.	NRIT 1	NRIT 2	NVRT	LIT 1	LIT 2	LIT 3	LIT 4	LIT 5	LIT 6	MATH 1	MATH 2	MATH 3	MATH 4	MATH 5	MATH 6
2006	EAL	89.57 1 st	93.32 5 th	107.62 5 th	102.10	97.90	—	94.61	93.06	96.10	95.56	95.98	—	100.41	103.37	102.33
	NON-EAL	99.08 1 st	95.36 5 th	105.81 5 th	104.88	104.76	—	103.52	100.68	103.11	99.98	100.34	—	105.45	108.34	106.24
2007	EAL	86.97 1 st	91.07 4 th	100.10 4 th	98.79	97.12	98.48	92.34	90.15	97.42	87.27	91.88	98.60	100.29	101.81	106.33
	NON-EAL	98.39 1 st	99.32 4 th	104.08 4 th	104.99	106.75	106.16	104.11	102.44	104.49	96.89	100.75	104.05	107.14	105.13	105.30
2008	EAL	91.86 1 st	92.35 3 rd	99.82 3 rd	100.12	99.81	98.69	95.88	96.22	97.59	95.64	98.45	101.65	101.98	103.26	103.29
	NON-EAL	99.69 1 st	100.64 3 rd	101.96 3 rd	103.82	106.73	105.48	107.87	103.89	108.02	102.51	105.13	104.06	106.93	104.14	107.06
2009	EAL	105.26 1 st	96.71 3 rd	107.68 3 rd	109.24	106.52	105.42	100.09	97.97	—	104.86	110.63	108.85	110.94	108.27	—
	NON-EAL	111.77 1 st	103.35 3 rd	103.32 3 rd	108.32	109.27	108.34	105.20	103.92	—	106.59	110.63	106.80	106.43	105.34	—
2010	EAL	104.07 1 st	94.29 3 rd	108.14 3 rd	111.07	106.18	107.23	101.71	—	—	105.59	107.13	109.49	110.29	—	—
	NON-EAL	110.55 1 st	101.48 3 rd	104.37 3 rd	109.82	109.75	107.56	105.83	—	—	106.91	107.45	106.76	107.56	—	—

Note: EAL scores are statistically significantly lower on 16 of the 26 occasions when literacy tests were examined

Literacy Tests

The mean scores for EAL and Non-EAL groups on all literacy tests are outlined on Table 4 above. Table 4 also highlights where the mean scores are statistically significantly different in literacy tests. EAL groups scored statistically significantly lower than the Non-EAL groups on 16 of the 26 occasions examined in this study (see Table 4).

2006 Cohort. In this Cohort the mean scores of the EAL groups were statistically significantly lower than the mean scores of the Non-EAL group in 2nd, 4th, 5th, and 6th classes on the MICTA-T test for literacy. The mean score of the EAL group was lower but not statistically significantly lower in 1st class and there is no data available for 3rd class (see Figure 4)

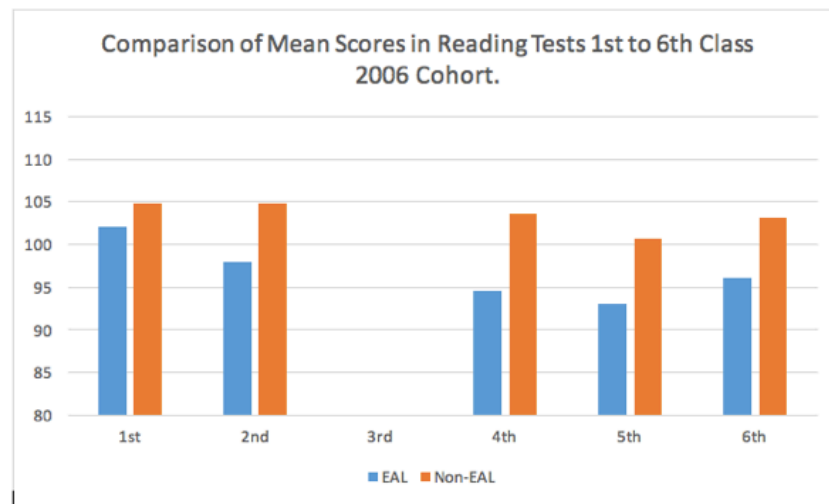


Fig. 4 – comparison of mean EAL scores and Non-EAL scores on reading tests from first to sixth class for 2006 cohort.

The mean score of the EAL group on the MICRA-T in 2nd Class ($M = 97.90$, $SD = 11.32$) was statistically significantly lower ($t(120) = 2.90$, $p = .004$) than the mean score of the Non-EAL group on the same test ($M = 104.76$, $SD = 12.64$) in May 2010. The mean score of the EAL group on the MICRA-T in 4th Class ($M = 94.61$, $SD = 10.26$) was statistically significantly lower ($t(119) = 3.42$, $p < .001$) than the mean score of the Non-EAL group on the same test ($M = 103.52$, $SD = 14.48$) in May 2012. The mean score of the EAL group on the MICRA-T in 5th Class ($M = 93.06$, $SD = 9.06$) was statistically significantly lower ($t(126) = 3.78$, $p < .001$) than the mean score of the Non-EAL group on the same test ($M = 100.68$, $SD = 12.64$) in May 2013. The mean score of the EAL group on the MICRA-T in 6th Class ($M = 96.10$, $SD = 8.25$) was statistically significantly lower ($t(120) = 2.84$, $p = .005$) than the mean score of the Non-EAL group on the same test ($M = 103.11$, $SD = 12.45$) in May 2014.

Even though there was no statistically significant difference ($t(128) = 1.09$, $p = .532$) between the mean score of the EAL group ($M = 102.10$, $SD = 10.30$) on the MICRA-T in 1st Class in May 2009 and the mean of the Non-EAL group ($M = 104.88$, $SD = 14.48$) on the same test, the mean score of the EAL group was still lower than the mean

score of the Non EAL group. There was no suitable data available for 3rd Class in this cohort.

2007 Cohort. In this Cohort the mean score of the EAL group was statistically significantly lower than the mean score of the Non-EAL group on the MICRA-T test for literacy in all classes 1st, 2nd, 3rd, 4th, 5th, and 6th (see Figure 5).

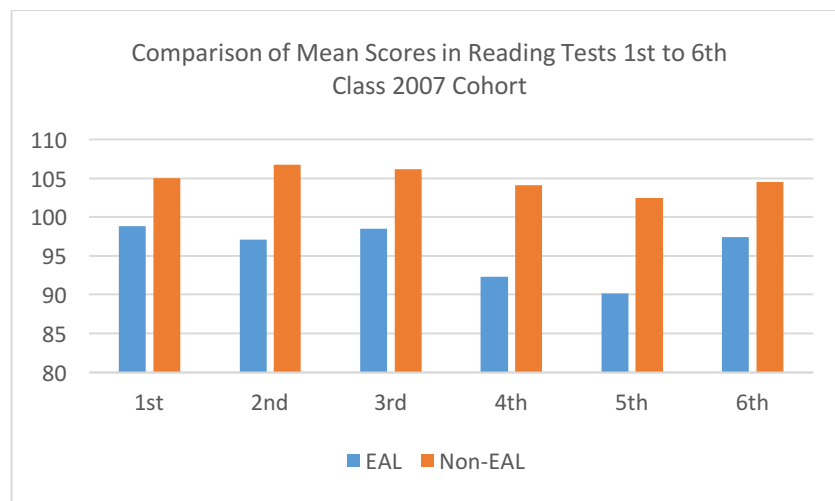


Fig. 5– comparison of mean EAL scores and Non-EAL scores on reading tests from first to sixth class for 2007 cohort.

The mean score of the EAL group ($M = 98.79$, $SD = 10.77$) on the MICRA-T in 1st Class was statistically significantly lower ($t(132) = 2.35$, $p = .020$) than the mean score of the Non-EAL group ($M = 104.99$, $SD = 13.83$) on the same test in May 2010. The mean score of the EAL group ($M = 97.12$, $SD = 10.22$) on the MICRA-T in 2nd Class was statistically significantly lower ($t(134) = 4.21$, $p < .001$) than the mean score of the Non-EAL group ($M = 106.75$, $SD = 14.87$) on the same test in May 2011 (see Table 4). The mean score of the EAL group ($M = 98.48$, $SD = 10.64$) on the MICRA-T in 3rd Class was statistically significantly lower ($t(127) = 3.18$, $p = .002$) than the mean score of the Non-EAL group ($M = 106.16$, $SD = 11.68$) on the same test in May 2012. The mean score of the EAL group ($M = 92.34$, $SD = 11.28$) on the MICRA-T in 4th Class was statistically

significantly lower ($t(127) = 4.06, p < .001$) than the mean score of the Non-EAL group ($M = 104.11, SD = 14.37$) on the same test in May 2013. The mean score of the EAL group ($M = 90.15, SD = 8.54$) on the MICRA-T in 5th Class was statistically significantly lower ($t(125) = 5.82, p < .001$) than the mean score of the Non-EAL group ($M = 102.44, SD = 12.93$) on the same test in May 2014. The mean score of the EAL group ($M = 97.42, SD = 10.64$) on the MICRA-T in 6th Class was statistically significantly lower ($t(127) = 2.43, p = .016$) than the mean score of the Non-EAL group ($M = 104.11, SD = 14.37$) on the same test in May 2015 (see Table 4).

2008 Cohort. In this Cohort the mean score of the EAL group was statistically significantly lower than the mean score of the Non-EAL group on the MICRA-T test for literacy in 2nd, 3rd, 4th, 5th, and 6th classes (Figure 6).

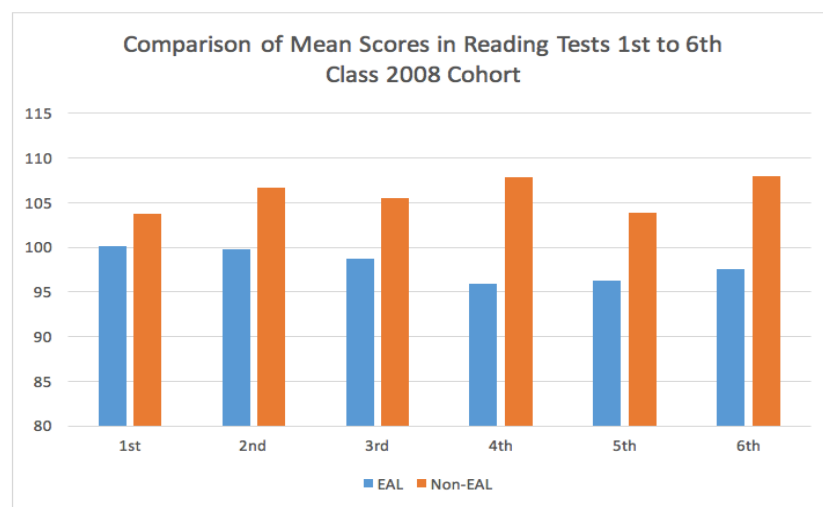


Fig. 6– comparison of mean EAL scores and Non-EAL scores on reading tests from first to sixth class for 2008 cohort.

The mean score of the EAL group ($M = 99.81, SD = 12.11$) on the MICRA-T in 2nd Class was statistically significantly lower ($t(158) = 3.17, p = .002$) than the mean score of the Non-EAL group ($M = 106.73, SD = 13.38$) on the same test in May 2012. The mean score of the EAL group ($M = 98.69, SD = 11.66$) on the MICRA-T in 3rd Class was statistically significantly lower ($t(149) = 3.17, p = .002$) than the mean score of the Non-EAL group ($M = 105.48, SD = 12.61$) on the same test in May 2013. The mean score of

the EAL group ($M = 95.88$, $SD = 13.77$) on the MICRA-T in 4th Class was statistically significantly lower ($t(143) = 5.16$, $p < .001$) than the mean score of the Non-EAL group ($M = 107.87$, $SD = 12.33$) on the same test in May 2014. The mean score of the EAL group ($M = 96.22$, $SD = 14.56$) on the MICRA-T in 5th Class was statistically significantly lower ($t(136) = 2.99$, $p = .003$) than the mean score of the Non-EAL group ($M = 103.89$, $SD = 12.91$) on the same test in May 2015. The mean score of the EAL group ($M = 97.59$, $SD = 15.08$) on the MICRA-T in 6th Class was statistically significantly lower ($t(135) = 3.73$, $p < .001$) than the mean score of the Non-EAL group ($M = 108.02$, $SD = 13.80$) on the same test in May 2016. There was no statistically significant difference ($t(157) = 1.74$, $p = .084$) between the mean score of EAL group ($M = 100.12$, $SD = 13.87$) and the mean score of the Non EAL group ($M = 103.82$, $SD = 11.99$) in 1st class on the MICRA-T in May 2011 but the EAL mean was lower than the Non-EAL mean.

2009 Cohort. There was no statistically significant difference between the mean scores of the EAL group and the mean score of the Non-EAL group on the MICRA-T in this cohort in 1st, 2nd, 3rd or 4th classes. In 5th class however the mean score of the EAL group is statistically significantly lower than the mean score of the Non-EAL group (Figure 7).

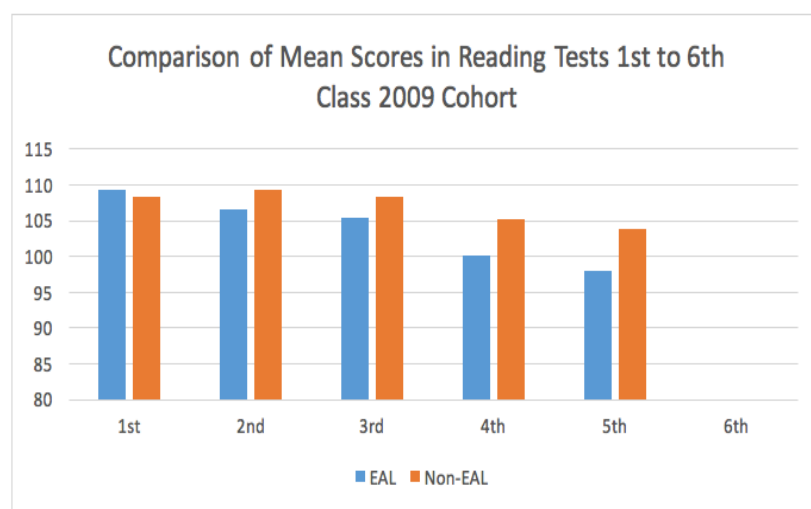


Fig. 7– comparison of mean EAL scores and Non-EAL scores on reading tests from first to sixth class for 2009 cohort.

There was no statistically significant difference ($t(130) = .349, p = .728$) between the mean score of EAL group ($M = 109.24, SD = 15.13$) and the mean score of the Non EAL group ($M = 108.32, SD = 13.53$) in 1st Class on the MICRA-T in May 2012. The EAL mean was however slightly higher than the Non-EAL mean. There was no statistically significant difference ($t(131) = 1.30, p = .195$) between the mean score of EAL group ($M = 106.52, SD = 12.89$) and the mean score of the Non EAL group ($M = 109.27, SD = 10.53$) in 2nd Class on the MICRA-T in May 2013. The EAL mean however was lower than the Non-EAL mean. There was no statistically significant difference ($t(123) = 1.28, p = .202$) between the mean score of EAL group ($M = 105.42, SD = 12.46$) and the mean score of the Non EAL group ($M = 108.34, SD = 10.73$) in 3rd Class on the MICRA-T in May 2014. The EAL mean was however lower than the Non-EAL mean. There was no statistically significant difference ($t(126) = 1.82, p = .071$) between the mean score of EAL group ($M = 100.09, SD = 15.53$) and the mean score of the Non EAL group ($M = 105.20, SD = 13.25$) in 4th Class on the MICRA-T in May 2015. The EAL mean was however lower than the Non-EAL mean. The mean score of the EAL group ($M = 96.22, SD = 14.56$) was statistically significantly lower ($t(126) = 2.21, p = .029$) than the mean score of the Non-EAL group ($M = 103.89, SD = 12.91$) on the MICRAT in 5th Class in May 2016. Data for MICRAT in 6th Class in May 2017 was not available at time of this study.

2010 Cohort. There was no statistically significant differences between the mean scores of the EAL group and the mean score of the Non-EAL group on the MICRA-T test of literacy in this Cohort of children. In 1st class the mean score of the EAL group was higher than the mean score of the Non-EAL group but not statistically significantly higher. In 2nd and 4th classes the EAL mean score was lower than the Non-EAL mean but not statistically significantly lower and in 3rd class they mean scores were almost even. Data

was not yet available for 5th and 6th classes for this cohort at the time of this study (Figure 8).

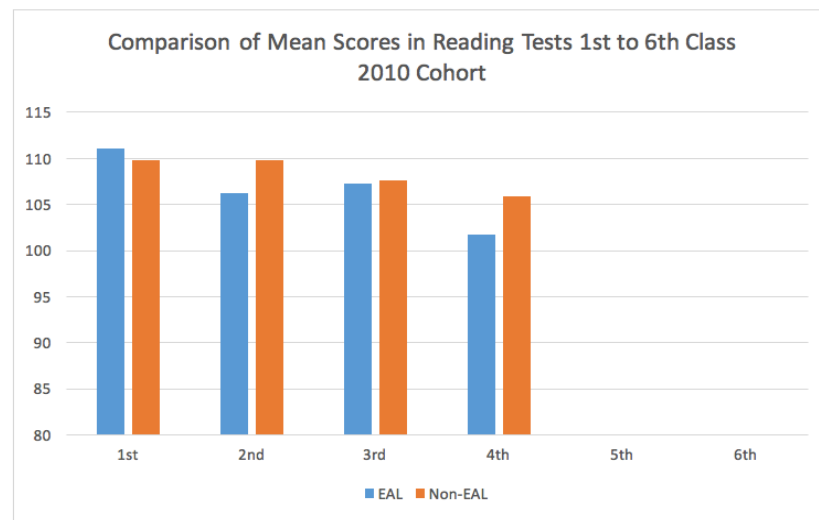


Fig. 8– comparison of mean EAL scores and Non-EAL scores on reading tests from first to sixth class for 2010 cohort.

There was no statistically significant difference ($t(135) = .539, p = .590$) between the mean score of EAL group ($M = 111.07, SD = 13.66$) and the Non EAL group ($M = 109.82, SD = 11.86$) in 1st Class on the MICRA-T in May 2013. However the EAL mean was higher than the Non-EAL mean. There was no statistically significant difference ($t(139) = 1.73, p = .086$) between the mean score of EAL group ($M = 106.18, SD = 12.20$) and the Non EAL group ($M = 109.75, SD = 10.50$) in 2nd Class on the MICRA-T in May 2014. Once again the EAL mean was lower than the Non-EAL mean. There was no statistically significant difference ($t(133) = .147, p = .884$) between the mean score of EAL group ($M = 107.23, SD = 11.80$) and the Non EAL group ($M = 107.56, SD = 10.84$) in 3rd Class on the MICRA-T in May 2015. The EAL and Non-EAL means are very close with the EAL mean marginally lower than the Non-EAL mean. There was no statistically significant difference ($t(135) = 1.65, p = .101$) between the mean score of EAL group ($M = 101.71, SD = 10.98$) and the Non EAL group ($M = 105.83, SD = 13.13$) in 4th Class on the MICRA-T in May 2016. However, the EAL mean was lower than the Non-EAL mean.

Data for MICRA-T in 5th Class in May 2017 and 6th Class in May 2018 were not available at time of writing.

Numeracy Tests

The mean scores for EAL and Non-EAL groups on all tests of numeracy are outlined on Table 5. Table 5 also highlights where the mean scores are statistically different in numeracy tests. The EAL groups scored statistically significantly lower on six of the 26 occasions examined in this study.

2006 Cohort. The mean scores of the EAL group were lower than the mean scores of the Non-EAL group on all occasions on the SIGMA-T numeracy test for this cohort. However, the mean scores of the EAL group were not statistically significantly lower than the mean scores of the Non-EAL group (Figure 9 & Table 5).

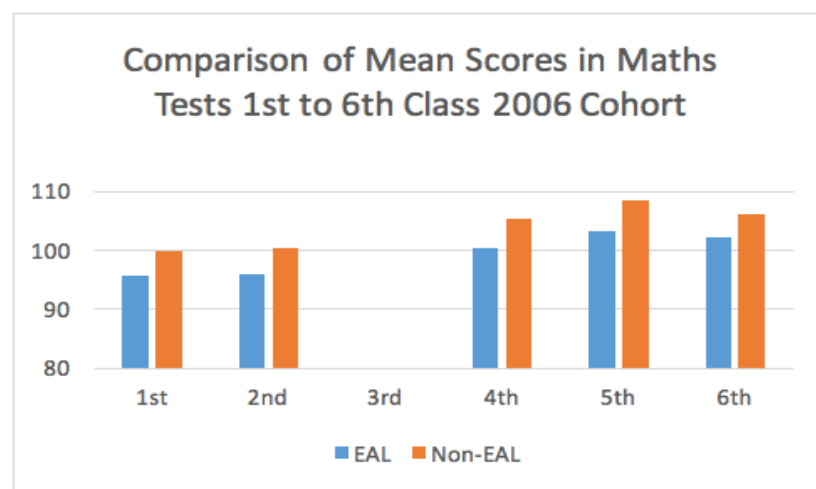


Fig. 9– comparison of mean EAL scores and Non-EAL scores on numeracy tests from first to sixth class for 2006 cohort.

There was no statistically significant difference ($t(125) = 1.74, p = .085$) between the mean score of EAL group ($M = 95.56, SD = 8.25$) and the Non EAL group ($M = 99.98, SD = 12.45$) in 1st Class on the SIGMA-T in May 2009. However the EAL mean was lower than the Non-EAL mean. There was no statistically significant difference ($t(120) = 1.68,$

$p = .095$) between the mean score of EAL group ($M = 95.98$, $SD = 12.88$) and the Non EAL group ($M = 100.34$, $SD = 13.72$) in 2nd Class on the SIGMA-T in May 2010.

However the EAL mean was lower than the Non-EAL mean. There was no statistically significant difference ($t(120) = 1.75$, $p = .083$) between the mean score of EAL group ($M = 100.41$, $SD = 14.00$) and the Non EAL group ($M = 105.45$, $SD = 14.89$) in 4th Class on the SIGMA-T in May 2012. There was no statistically significant difference ($t(126) = 1.82$, $p = .071$) between the mean score of EAL group ($M = 103.37$, $SD = 13.81$) and the Non EAL group ($M = 108.34$, $SD = 13.73$) in 5th Class on the SIGMA-T in May 2013. There was no statistically significant difference ($t(121) = 1.39$, $p = .168$) between the mean score of EAL group ($M = 102.33$, $SD = 12.88$) and the Non EAL group ($M = 106.24$, $SD = 13.59$) in 6th Class on the SIGMA-T in May 2014.

Table 5

Statistically Significantly Lower Scores on Numeracy Tests by EAL Groups Highlighted in Red

COHORT	GRP.	NRIT 1	NRIT 2	NVRT	LIT 1	LIT 2	LIT 3	LIT 4	LIT 5	LIT 6	MATH 1	MATH 2	MATH 3	MATH 4	MATH 5	MATH 6
2006	EAL	89.57 1 st	93.32 5 th	107.62 5 th	102.10	97.90	_____	94.61	93.06	96.10	95.56	95.98	_____	100.41	103.37	102.33
	NON-EAL	99.08 1 st	95.36 5 th	105.81 5 th	104.88	104.76	_____	103.52	100.68	103.11	99.98	100.34	_____	105.45	108.34	106.24
2007	EAL	86.97 1 st	91.07 4 th	100.10 4 th	98.79	97.12	98.48	92.34	90.15	97.42	87.27	91.88	98.60	100.29	101.81	106.33
	NON-EAL	98.39 1 st	99.32 4 th	104.08 4 th	104.99	106.75	106.16	104.11	102.44	104.49	96.89	100.75	104.05	107.14	105.13	105.30
2008	EAL	91.86 1 st	92.35 3 rd	99.82 3 rd	100.12	99.81	98.69	95.88	96.22	97.59	95.64	98.45	101.65	101.98	103.26	103.29
	NON-EAL	99.69 1 st	100.64 3 rd	101.96 3 rd	103.82	106.73	105.48	107.87	103.89	108.02	102.51	105.13	104.06	106.93	104.14	107.06
2009	EAL	105.26 1 st	96.71 3 rd	107.68 3 rd	109.24	106.52	105.42	100.09	97.97	_____	104.86	110.63	108.85	110.94	108.27	_____
	NON-EAL	111.77 1 st	103.35 3 rd	103.32 3 rd	108.32	109.27	108.34	105.20	103.92	_____	106.59	110.63	106.80	106.43	105.34	_____
2010	EAL	104.07 1 st	94.29 3 rd	108.14 3 rd	111.07	106.18	107.23	101.71	_____	_____	105.59	107.13	109.49	110.29	_____	_____
	NON-EAL	110.55 1 st	101.48 3 rd	104.37 3 rd	109.82	109.75	107.56	105.83	_____	_____	106.91	107.45	106.76	107.56	_____	_____

Note: EAL scores were statistically significantly lower on 6 of the 26 occasions when numeracy tests were examined

2007 Cohort. The mean scores of the EAL group were statistically significantly lower than the mean scores of the Non-EAL group in 1st, 2nd, 3rd and 4th on the SIGMA-T

for this cohort of children. The EAL mean was still lower than but not statistically significantly lower than the Non-EAL mean in 5th class and the EAL mean was higher but not statistically significantly higher in 6th class than the Non EAL mean (Figure 10 & Table 5).

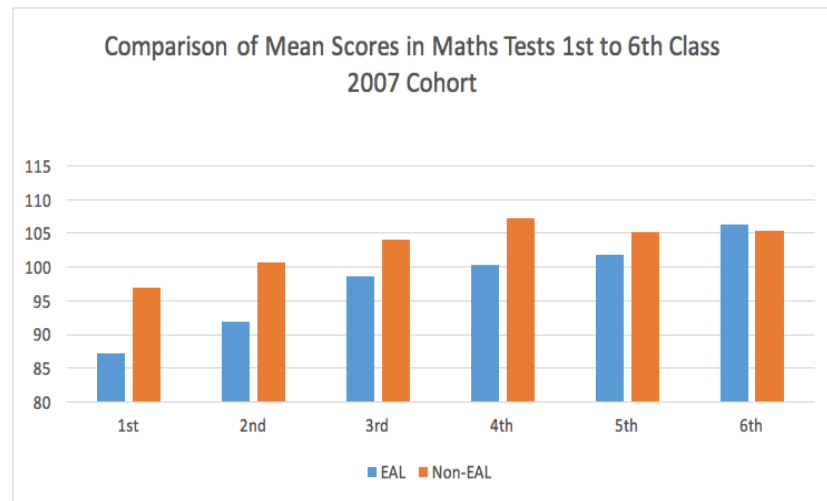


Fig 10 – comparison of mean EAL scores and Non-EAL scores on numeracy tests from first to sixth class for 2007 cohort.

In 1st class the mean score of the EAL group ($M = 87.27$, $SD = 11.20$) was statistically significantly lower ($t(135) = 4.13$, $p < .001$) than the mean score of the Non-EAL group ($M = 96.89$, $SD = 11.817$) on the SIGMA-T in May 2010. In 2nd class the mean score of the EAL group ($M = 91.88$, $SD = 13.45$) was statistically significantly lower ($t(135) = 3.39$, $p = .001$) than the mean score of the Non-EAL group ($M = 100.75$, $SD = 13.15$) on the SIGMA-T in May 2011. In 3rd class the mean score of the EAL group ($M = 98.60$, $SD = 12.22$) was statistically significantly lower ($t(127) = 2.12$, $p = .036$) than the mean score of the Non-EAL group ($M = 104.05$, $SD = 12.39$) on the SIGMA-T in May 2012. In 4th class the mean score of the EAL group ($M = 100.29$, $SD = 13.94$) was statistically significantly lower ($t(125) = 2.43$, $p = .016$) than the mean score of the Non-EAL group ($M = 107.14$, $SD = 12.94$) on the SIGMA-T in May 2013. In 5th class the mean score of the EAL group ($M = 101.81$, $SD = 14.24$) was lower than the mean score of the Non-EAL

group ($M = 105.13$, $SD = 13.11$) but was not statistically significantly lower ($t(126) = 1.13$, $p = .260$). In 6th class the mean score of the EAL group ($M = 106.33$, $SD = 16.03$) was higher than the mean score of the Non-EAL ($M = 105.30$, $SD = 15.18$) group but not statistically significantly higher ($t(128) = .298$, $p = .766$).

2008 Cohort. The mean scores of the EAL group were statistically significantly lower than the mean scores of the Non-EAL group in 1st and 2nd classes on the SIGMA-T for this cohort of children. The mean score of the EAL group was also lower but not statistically significantly lower than the mean score of the Non-EAL group in 3rd, 4th, 5th and 6th classes (Figure 11 & Table 5).

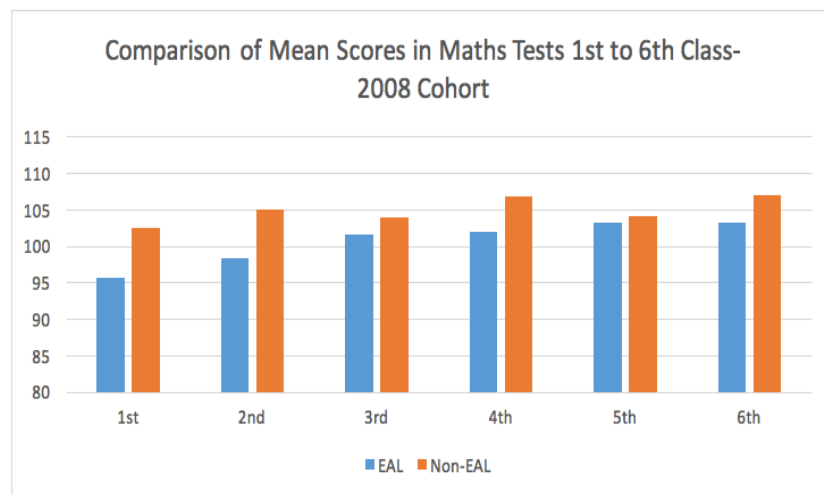


Fig. 11– comparison of mean EAL scores and Non-EAL scores on numeracy tests from first to sixth class for 2008 cohort.

In 1st class the mean score of the EAL group ($M = 95.64$, $SD = 14.66$) was statistically significantly lower ($t(153) = 2.87$, $p = .005$) than the mean score of the Non-EAL group ($M = 102.51$, $SD = 13.54$) on the SIGMA-T in May 2011. In 2nd class the mean score of the EAL group ($M = 98.45$, $SD = 15.56$) was statistically significantly lower ($t(159) = 2.86$, $p = .005$) than the mean score of the Non-EAL group ($M = 105.13$, $SD = 13.09$) on the SIGMA-T in May 2012. In 3rd class the mean score of the EAL group ($M = 101.65$, $SD = 16.30$) was lower than the Non-EAL group ($M = 104.06$, $SD = 14.03$) but not statistically significantly lower ($t(148) = .934$, $p = .352$). In 4th class the mean score of the

EAL group ($M = 101.98$, $SD = 17.79$) was lower than the Non-EAL group ($M = 106.93$, $SD = 14.94$) but was not statistically significantly lower ($t(144) = 1.74$, $p = .084$). In 5th class the mean score of the EAL group ($M = 103.26$, $SD = 15.72$) was lower than the Non-EAL group ($M = 104.14$, $SD = 14.19$) but was not statistically significantly lower ($t(137) = .315$, $p = .753$). In 6th class the mean score of the EAL group was also lower ($M = 103.29$, $SD = 17.71$) than the mean score of the Non-EAL group ($M = 107.06$, $SD = 14.56$) but was not statistically significantly lower ($t(134) = 1.224$, $p = .223$).

2009 Cohort. There were no statistically significant differences between the mean scores in the EAL and the mean scores in the Non-EAL groups on the SIGMA-T in this cohort. The mean scores were lower for the EAL group in 1st class, they are even in 2nd class and the mean scores are higher in 3rd, 4th, and 5th for the EAL group than for the Non-EAL group but not statistically significantly higher (Figure 12 & Table 5).

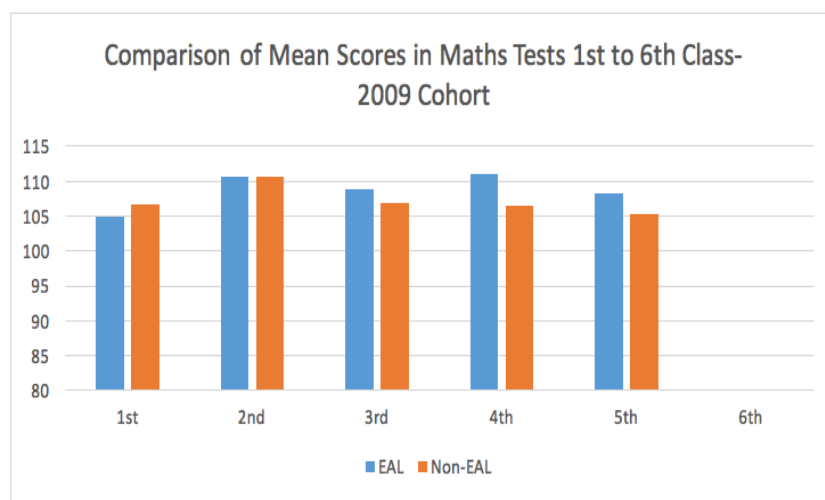


Fig. 12– comparison of mean EAL scores and Non-EAL scores on numeracy tests from first to sixth class for 2009 cohort.

In 1st class the mean score on the SIGMA-T for the EAL group ($M = 104.86$, $SD = 14.71$) was lower than the mean score of the Non-EAL group ($M = 106.59$, $SD = 12.90$) but was not statistically significantly lower ($t(130) = .687$, $p = .494$). In 2nd class there was no difference ($t(129) = .001$, $p = 1.000$) between the mean score of the EAL group ($M = 110.63$, $SD = 15.26$) and the Non-EAL group ($M = 110.63$, $SD = 13.81$) on the SIGMA-T.

In 3rd class the mean score of the EAL group ($M = 108.85$, $SD = 15.82$) was higher than the mean score of the Non-EAL ($M = 106.80$, $SD = 13.98$) on the SIGMA-T but it was not statistically significantly higher ($t(123) = .696$, $p = .488$). In 4th class the mean score of the EAL group ($M = 110.94$, $SD = 16.97$) was higher than the mean score of the Non-EAL group ($M = 106.43$, $SD = 14.88$) on the SIGMA-T but was not statistically significantly higher ($t(126) = 1.445$, $p = .151$). In 5th class the mean score of the EAL group ($M = 108.27$, $SD = 17.05$) was higher than the mean score of the Non-EAL ($M = 105.34$, $SD = 15.14$) on the SIGMA-T but it was not statistically significantly higher ($t(126) = .928$, $p = .355$). There was no data available for 6th class at the time of this study.

2010 Cohort. There were no statistically significant differences between the mean scores in the EAL and the mean scores in the Non-EAL groups on the SIGMA-T in this cohort. The mean scores were lower for the EAL group in 1st class than for the Non-EAL group but not statistically significantly lower. The mean scores were almost even in 2nd class and the mean scores were higher in 3rd and 4th class for the EAL group than for the Non-EAL group but not statistically significantly higher (Figure 13 & Table 5)

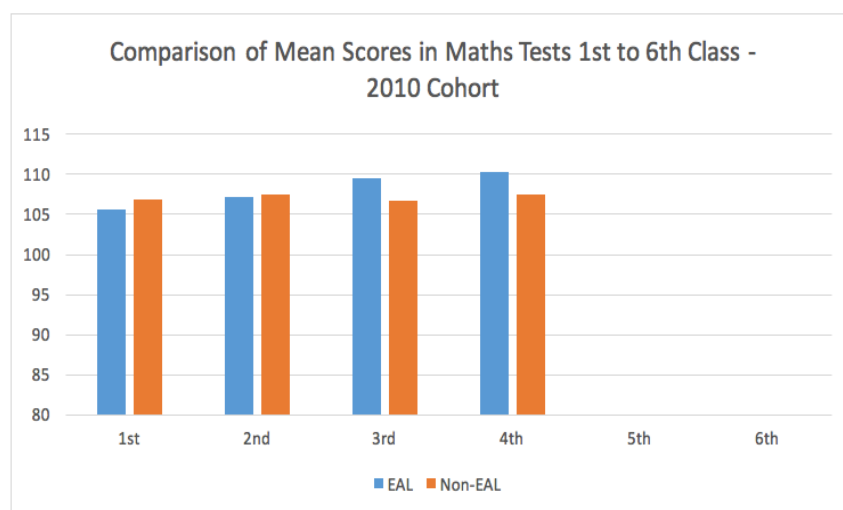


Fig. 13– comparison of mean EAL scores and Non-EAL scores on numeracy tests from first to sixth class for 2010 cohort.

In 1st class the mean score of the EAL group ($M = 105.59$, $SD = 13.61$) was lower than the mean score of the Non-EAL group ($M = 106.91$, $SD = 12.27$) but was not statistically

significantly lower ($t(134) = .557, p = .578$). In 2nd class the mean score of the EAL ($M = 107.13, SD = 15.76$) group was almost the same as the mean score of the Non-EAL group ($M = 107.45, SD = 13.18$), ($t(140) = .122, p = .903$). In 3rd class the mean score of the EAL group ($M = 109.49, SD = 14.62$) was higher than the mean score of the Non-EAL group ($M = 106.76, SD = 14.35$) but was not statistically significantly higher ($t(136) = .967, p = .335$). In 4th class the mean score of the EAL group ($M = 110.29, SD = 15.99$) was again higher than the mean score of the Non-EAL group ($M = 107.56, SD = 15.56$) but was not statistically significantly higher ($t(135) = .888, p = .376$). Data for 5th and 6th classes for this Cohort of children was not available at the time of this study.

Significance of t on each test for each group in each cohort

	2006 Cohort	2007 Cohort	2008 Cohort	2009 Cohort	2010 Cohort
Ability Tests					
NRIT 1	-4.572***	-5.555***	-4.736***	-2.336*	-2.512*
NRIT 2	-1.343	-4.182***	-4.656***	-2.124*	-2.546*
NVRT	0.627	-1.523	-1.008	2.067*	1.728
Literacy Tests					
MICRA-T 1	-1.239	-2.352*	-1.736	0.349	0.539
MICRA-T 2	-2.908**	-4.210***	-3.174**	-1.303	-1.728
MICRA-T 3	-----	-3.176**	-3.171**	-1.281	-0.147
MICRA-T 4	-3.872***	-4.057***	-5.163***	-1.824	-1.652
MICRA-T 5	-3.781***	-5.817***	-2.988**	-2.206*	-----
MICRA-T 6	-3.495**	-2.433*	-3.734***	-----	-----
Numeracy Tests					
SIGMA-T 1	-1.738	-4.125***	-2.877**	-0.687	-0.557
SIGMA-T 2	-1.683	-3.389**	-2.855**	-0.001	-0.122
SIGMA-T 3	-----	-2.117*	-0.934	0.696	0.967
SIGMA-T 4	-1.750	-2.433*	-1.741	1.445	0.888
SIGMA-T 5	-1.824	-1.133	-0.315	0.928	-----
SIGMA-T 6	-1.385	0.298	-1.224	-----	-----
N					
Note: *** $p < .001$; ** $p < .01$; * $p < .05$					

Fig. 14- illustrates the significance of the t values between EAL and Non-EAL groups

Conclusion

This study involved the statistical examination of the standardised test scores of five cohorts of children as they progressed through a primary school from 1st class to 6th class. Each cohort was divided into two groups, EAL and Non-EAL, and the performances of the two groups were compared. The raw data from the two groups were compared using SPSS to calculate both descriptive statistics (*N*, Mean, Standard Deviation & Standard Error Mean) and inferential statistics (statistically significant difference). Chapter Five presents a critical analysis of the research results.

Chapter Five: Discussion

Introduction

In this chapter, I discuss the results from this study. This discussion includes an analysis of the performance by EAL children in comparison with their Non-EAL peers on the NRIT/NNRIT, the NVRT, and literacy and numeracy tests. I discuss the results in light of conceptual work on the development of second languages and the literature on assessment of ML children. In examining patterns within and across the tests, and I draw inferences based on identified commonalities. For the purposes of this discussion I will refer to the NRIT and the NNRIT collectively as the NRIT for the remainder of this chapter.

This study provides overwhelming statistical evidence of underperformance by EAL children on the NRIT. As a result I claim that the NRIT is a test that is unsuitable for use with EAL children. I challenge its use with EAL children on four grounds; that it requires levels of English language proficiency that most EAL children have not had the time or opportunity to develop prior to testing, that it misrepresents EAL children's abilities and intelligences, that it may contribute to the disproportionate representation of ML children in SEN, and that it challenges the delivery of social justice and equality in education.

Language Proficiency and the NRIT

This study examined the performance of five cohorts of children on the NRIT on 10 occasions, and compared the performance of EAL and Non-EAL groups for difference, using statistical analysis software. Two clear patterns have been identified from the data.

The first pattern identified was that EAL groups of children performed statistically significantly lower on nine of the 10 occasions and lower on the 10th occasion on which the NRIT was examined. The second pattern identified was that the achievement gap

between the EAL and the Non-EAL groups remained consistent on the NRIT as the groups progressed through the school (see Figure 14 above).

International research and theory on second language acquisition reminds us that it takes approximately five to ten years to learn a second language to the academic grade norms required for success in tests and assessment (Cummins, 2001; Klesmer, 1994; Shohamy, 1999). The EAL children in this study had only been learning English for 3-5 years when they were tested on the NRIT, initially in 1st class and subsequently in 3rd or 4th class.

It is also a common misconception that conversational skills in English can be interpreted as a valid index of overall proficiency in the English language (Cummins, 2001). This, along with school and systems policies that require the testing of all students, except in exceptional circumstances, explains why teachers may have judged EAL children ready for the NRIT when they were not. Teachers judgements may also have been misled by the '2-year' rule that governed initial government policy on language support for migrant children leading them into believing that two years was a sufficient length of time to acquire English language proficiency. Although EAL children, in this study, may have had good levels of conversational or 'playground language' (Gibbons, 1991) after 3-5 years at school, they clearly did not have the levels of academic language proficiency required by the NRIT. Less frequent vocabulary and the language manipulation required in cognitively demanding and context reduced situations such as the NRIT differs substantially from everyday context imbedded conversational interactions that children encounter in the classroom or playground (Cummins, 2001; Gandy, 2013; García, McKoon, & August, 2006). Verbal intelligence tests require students to stretch their linguistic resources to the limit to function successfully (Cummins, 2001) and EAL children do not have the same linguistic resources in English as children who speak

English as a first language, thereby placing them on an uneven playing field and disadvantaging them.

The second pattern identified in this study is the persistent nature of the achievement gap between the two groups on the NRIT as they progress through the school. This pattern is clearly identifiable in the 2007, 2008, 2009 & 2010 cohorts. The significance of the gap remains more or less the same from when they were initially tested in 1st class to when they were subsequently tested in 3rd or 4th class (see Figure.14).

The persistent nature of this achievement gap can be explained by the fact that Non-EAL children are not 'standing still' while waiting for EAL children to catch up. English language speakers come to schools fluent in conversational English, and yet we spend another 14 years teaching them English in order to expand this initial competence into academic spheres. EAL children must therefore "catch up with a moving target" (Cummins, 2001, p. 75). Collier & Thomas (1999), have estimated that in order to catch up to grade norms within six years, EAL students must make 15 months gain in every 10-month school year, compared to 10-month gain expected for the typical native-speaking student. Once again this situation disadvantages and discriminates against the EAL children when their performance on the NRIT is compared to their Non-EAL peers.

On one occasion, in this study, a narrowing of the gap between the two groups was observed. This was when the NRIT was carried out for the second time in 5th class, with the 2006 cohort. By 5th class the EAL children had been learning English for six years and one explanation for the narrowing of the gap could be that the language proficiency levels of the EAL group were approaching grade norms after six years. The EAL mean on this occasion ($M= 93.32$) however, does not compare favourably with any of the other Non-EAL means in the study, indicating that they still had a considerable distance to go in

order to 'catch up' with the overall average Non-EAL performance, even after six years learning English.

Another explanation could be rooted in the fact that there were significant numbers of new enrolments into this cohort of children, during their senior years in the primary school. This situation may have diluted the composition of the Non-EAL group by the time they were in 5th class, resulting in a lowering of the mean score for this group. It is worth noting that the Non-EAL mean ($M= 95.36$) on this occasion is the lowest Non-EAL mean evidenced in this study. The children initially identified as members of the EAL group remained consistent throughout the study, however the results of newer, later enrolments were included in the Non-EAL group as details on the backgrounds of these children were not available for reasons of data protection.

It could be suggested that the reason for consistently significant underperformance by the EAL groups on the NRIT was simply because the EAL groups were of lower academic ability. Evidence from the NVRT, another ability test, examined in this study refutes this suggestion. Analysis of the data indicated that there were no statistically significant differences between the EAL and the Non-EAL groups on four out of the five occasions on which the results of the NVRT were examined. On the one occasion where there was a statistically significant difference between the groups, the EAL group scored statistically significantly higher than the Non-EAL group. On the other four occasions that the NVRT was examined, each group scored higher/lower on two occasions each, with no evidence of statistically significant difference. In contrast to the NRIT, no pattern of difference was identifiable between the groups on this 'non-verbal' reasoning test (see *Figure 14*). These findings are in line with Canadian research that showed significant gaps between EAL students and a control group of Non-EAL students in verbal academic areas, but not on non-verbal ability, after six years of residence in Canada (Klesmer, 1994).

Language Proficiency and Numeracy and Literacy Tests

No pattern of statistically significant differences between the EAL and Non-EAL groups in numeracy tests were identified from the data in this study. Instead patterns of improved performance among the EAL groups as they progressed through the primary school were identified, with the EAL groups in 2009 and 2010 cohorts outperforming their Non-EAL peers from 3rd class onwards. The EAL group in 2007 cohort were the only group that scored statistically significantly lower than their Non-EAL peers on a continuous basis. However, despite this situation their mean score continued to rise over the period from 1st class to 6th class, when they eventually surpassed the Non-EAL group. The EAL groups in 2006 and 2008 cohorts showed a similar improvement in their final scores for numeracy in 6th class, when compared to their initial scores in 1st class. In general the numeracy scores for the EAL children improved as they progressed through the school with the gap in achievement narrowing in the earlier cohorts and the EAL groups outperforming their peers in the later cohorts. Further research is required to investigate how the EAL children compensated for the increasing literacy component of numeracy tests as they progressed through the school.

In contrast to the evidence from the NVRT and standardised tests of numeracy, a pattern of statistically significantly lower or lower scores by the EAL groups on literacy tests was clearly identifiable from the data. The achievement gap in reading remained significant in the three earlier cohorts as they progressed from 1st to 6th class. In the two later cohorts the gap grew steadily from 2nd class onwards until it became significant in 5th class in 2009 cohort. An explanation for this could be that the EAL children did not have the levels of English language proficiency necessary, on a continuous and persistent basis, that allowed them the equal opportunity for success on literacy tests in English from 2nd class onwards. Relative success by EAL groups at the 1st class level in all cohorts, on

literacy tests, can be explained by the fact that skills tested at this early level of literacy included early phonics and blending skills (discrete language skills) essential for the early stages of literacy development, and very little in the way of vocabulary or comprehension skills (academic language proficiency skills) required in later literacy. Care is therefore required in the interpretation of the results of literacy tests completed by ML children in light of the evidence provided in this study and in light of theories on the development of academic language proficiency. These patterns identified in the literacy results replicate the findings in other studies, both national (Eivers et al, 2010) and international, which indicate that ML children show patterns of underachievement in reading (Bedore & Pēna, 2008; Cook et al., 2015; Darmody, McGinnity & Murray, 2015; Meunier, 2010; OECD, 2009, 2012). It is interesting and worth noting that the Non-EAL mean in the two later cohorts drops as they progress through the school, however discussion of this is beyond the confines of this study.

Misrecognition

Based on the results of this study, and in light of current research and theory on the development of second languages in ML children, I argue that the NRIT is an unsuitable test for use with EAL children in primary schools. Analysis of the results of this study in light of the theories described by Cummins (2001) and others (Gibbons, 1991; Skutnabbkangas & Toukoma, 1984) clearly indicates that an EAL child's level of language proficiency, following 3-6 years of learning English, is not adequately developed to allow them to do a test of verbal intelligence on an equal footing with native English speakers. Exposing a child to a testing situation that discriminates against them ensures that they are in danger of being misrepresented and misrecognized on this test of intelligence. Misrecognition of a child's abilities can have serious consequences for the development of that child's identity as a learner, for their academic confidence, their self-esteem and for

their future educational success (Taylor, 1994; Dooley, 2012; Bourdieu & Passerson, 1977). In fact, forcing ML children into a competitive mechanism that rewards dominant linguistic capital only, is a pedagogic action that subjects ML pupils to a form of ‘symbolic violence’ (Bourdieu & Passerson, 1977; Tzanakis, 2011, p. 77) that is unacceptable in a system that purports to enable each child to realise his or her full potential as a unique individual (DES, 1999).

Disproportionate Representation

Data on the use of the NRIT is limited, however anecdotal evidence gathered from colleagues and test companies suggests that it is widely used in primary schools around Ireland. Its status as a test of ability is enhanced by its frequent mention in DES publications. It is included on the NCSE list of tests approved for use in Irish primary schools (DES, 2017). It is mentioned by the Professional Development Service for Teachers (PDST) in some of its publications (PDST, 2012, 2014, 2017). Most importantly, it is advocated for use by NEPS and the DES in their publication *Special Educational Needs, Continuum of Support, Guidelines for Teachers* (DES, 2007) which forms part of the NEPS *Model of Service* (DES, 2017). The NRIT is specifically mentioned in these guidelines in an exemplar for teachers explaining how to gather evidence and information on a child when assessing that child’s level of need for learning support (p. 24). The NRIT may also influence decisions around access to scarce resources such as a NEPS referral (PDST, 2012, 2014, 2017). The PDST (2017) even provide a tool which “allows a school to track individual children over their time in school and compare this to their score from an ability test, such as the NRIT” (para. 3). The results of the NRIT make an influential contribution to the formation of the ‘picture’ of a child in the school system. It is used to inform opinion as to whether a child is performing in-line with their perceived ability, and it is used to aid the early identification of learning difficulties.

As mentioned above misconceptions about the nature of second language acquisition and language proficiency levels, can lead to EAL children, who have good conversational skills in English, being perceived as proficient in English. This can lead to a more ‘subtle’ misconception that can have far reaching consequences. This ‘subtle’ misconception means that once the EAL child ‘appears’ proficient in English, it may lead teachers into eliminating ‘lack of English language proficiency’ as a reason for low academic performance or test scores. Difficulties that the student experiences may then be identified as ‘deficiencies’ in the student himself or in his background experiences (Cummins, 2001). Low scores on the NRIT, alongside low scores on literacy and numeracy tests, may lead teachers into believing that the student has low ability and may cause placement in lower streams, thereby reducing expectations for that child and limiting their exposure to a challenging curriculum. Similarly such low scores on the NRIT could eliminate the possibility of a child being recognised as having a specific difficulty such as dyslexia, as such diagnosis requires a significant gap between measured ability and measured achievement in reading. Devine (2011) found in her research that teachers in Ireland struggled to identify if poor performance was due to an underlying language and/or learning difficulty.

A Matter of Social Justice.

Standardised tests and informal assessment cannot be viewed in isolation from each other. Teachers in their informal assessments make judgments and decisions which affect what curriculum students are exposed to, what group they are assigned to and overall what educational experience they will receive (Elwood & Lundy, 2010). This in turn will affect their performance in the standardised tests. Thus, assessment programs and structures tend to interact with teachers’ views and perceptions of children’s achievements with “profound implications for equality of treatment and access to higher-level success”

(Elwood & Lundy, 2010, p. 342). Decisions on what to assess and how to assess it ultimately impacts on a child's performance and how they achieve. This is particularly true for ML children. Decisions around 'streaming' and 'grouping' of children based on these assessments will further impact on educational achievement, disadvantaging some children, discriminating against some groups and 'positioning winners and losers on the field' within the 'education game'.

Children have rights to equality and justice in the education system. This includes rights to equality, justice and freedom from discrimination in assessment. The NCCA has developed its guidelines for assessment practices in line with the *Equal Status Act* (2000), the *Education Act* (1998), the *Primary School Curriculum* (1999) and *United Nation Convention on the Rights of the Child* ([UNCRC], UN, 1989). The NCCA uses these laws and documents as benchmarks to set standards for schools. The guidelines are issued to schools and schools are expected to develop their policies and practices in line with these guidelines. Through the guidelines schools should be aware of their obligations, legal and moral, to ensure that every child's right to non-discrimination in assessment is a reality in the classroom. The use of the NRIT with EAL children denies the EAL child's right to non-discrimination in assessment.

Analysis of EAL Performance across the Cohorts

Broader analysis of the performance of the EAL groups in this study identifies a pattern of improvement across the board in 2009 & 2010 cohorts in literacy and numeracy. Although data for 6th class in 2009 cohort and 5th and 6th classes in 2010 cohort were not available at the time of this study, further study will examine whether this pattern continues. Despite the improvements identified in comparative performance in literacy and numeracy, the 2009 and 2010 EAL groups continued to perform statistically

significantly lower than their Non-EAL peers on the NRIT, further highlighting it as an unsuitable test for use with primary school EAL children.

The number of statistically significantly lower scores by EAL groups in literacy dropped to one in nine in the 2009 & 2010 cohorts (on tests completed to date), from 15 out of 17 in the previous three cohorts. Similarly, the numeracy scores show a dramatic improvement with EAL groups outperforming the Non-EAL groups on five out of nine numeracy tests completed (to date) by the 2009 & 2010 cohorts, compared to one out of 15 in the previous three cohorts. Three of the many variables which may have impacted on the performance of the EAL children were considered in the analysis of this improvement.

Language Support. Patterns of attendance at EAL classes for the 2006, 2007 & 2008 cohorts differed slightly to the patterns of attendance for the 2009 & 2010 cohorts. Government policy also changed during these years and the ‘2-year rule’ was lifted, allowing greater flexibility of attendance at EAL support classes. ‘In-class’ support also ended during the time of the 2009 & 2010 cohorts. Instead of two sessions of ‘in-class’ support per week, using a shared teaching model, it was decided following discussion, that intensive language support classes in small groups four days a week should replace the 2 in-class, 2 small group model.

PSAK. Another variable worth considering was the introduction of the The Primary School Assessment Kit (PSAK) (NCCA, 2007). PSAK (2007) was introduced to primary schools for 2008 -2009 academic year, and it is worth considering the impact of its introduction on performance. It could be posited that PSAK ensured a better assessment of language proficiency levels for the 2009 & 2010 cohorts, ensuring that they received sufficient English language support, further ensuring their relative success on standardised tests of literacy and numeracy. Further research is required to investigate whether there are

correlations between levels achieved in PSAK tests and levels achieved in standardised tests.

Teachers. Teachers are recognized as a powerful force in insuring that ML children experience their rights to equality and justice in education and assessment. It is in the teacher's management of diversity in their classrooms, and in the micro-interactions between the teacher and the child, that respect for diversity is fostered, injustice is challenged and children are empowered (Archer & Francis, 2007; Baker & Lynch 2005; Cummins, 1986; Gay, 2010). It is in such classrooms that children have a lived experience of equality and justice in a truly intercultural education system where their confidence, motivation and self-belief grows resulting in improved performance.

Conclusion

In the discussion and analysis of the results from this study I critically examined the performance of five cohorts of children as they progressed through a primary school. In comparing the results of the EAL and Non-EAL groups, patterns of statistically significant difference in the performance of the groups were identified particularly in relation to the NRIT and literacy tests. Critical analysis of the patterns of underperformance in light of conceptual work on the development of second languages and the literature on assessment of ML children clearly indicated that the NRIT is a test that is unsuitable for use with EAL children.

Reasons for the statistically significantly lower scores by EAL groups on the NRIT were accounted for in this discussion by referral to the conceptual and theoretical work on the many levels of language proficiency. Very advanced levels of language proficiency are required for success on verbal intelligence tests and most EAL children have not had the time or opportunity to develop these higher levels prior to being tested on the NRIT in the

primary school. This situation opens a challenge to the validity of using this test with EAL children on the grounds of equality of opportunity, fairness and justice in assessment.

Patterns of statistically significant performance on literacy tests were also noted particularly in the earlier three cohorts. An explanation for this could be that the EAL children did not have the levels of academic language proficiency in English necessary, on a continuous and persistent basis, that allowed them the equal opportunity for success on literacy tests in English from 2nd class onwards. Further study would reveal whether 2009 & 2010 cohort's lower scores become statistically significantly lower as they rise through the grades, providing insight into whether the higher levels of academic language proficiency required for advanced literacy skills are attained and maintained by these cohorts.

Issues of misrepresentation and misrecognition of EAL children's abilities and intelligences in relation to the NRIT and literacy tests were also critically discussed with reference to the relevant literature on the dangers associated with exposing ML children to assessment situations that could potentially damage the self-confidence and self-belief of those children or present them as 'low achievers'. The IES (2010) acknowledges the dangers of associated with being labelled as a 'low achiever' so early in education when it cautions that being labelled as a 'low- achiever' can become a self- fulfilling prophecy (OECD, 2009).

Broader analysis of the data across the cohorts identified a pattern of improved performance on literacy and numeracy tests in the 2009 & 2010 cohorts in the study. Some explanations for this improvement were posited based on the literature in relation to recognized conditions that support ML children's performance at school. Policy and procedural variables in the school, which may have effected performance were also discussed however, consideration of all variables was beyond the confines of this study.

Despite improvements on literacy and numeracy tests, the statistically significant nature of the difference between the two groups on the NRIT remained for 2009 & 2010 cohorts, further evidencing the unsuitability of the NRIT for use with EAL students.

In Chapter Six I conclude the study with some recommendations for changes to policy with regard to the uses of standardised tests with EAL children. I also include recommendations for further study in this area that would help to explore and answer many of the questions that arose during the course of this study but were beyond the confines of this dissertation.

Chapter Six: Conclusion

Introduction

Recent decades have seen Irish society change and evolve from being a mainly white, Irish, catholic, monolingual society into a far more ethnically, culturally, religiously and linguistically diverse society. Interculturalism is the philosophical and political model employed by Irish Government in addressing the needs of its multicultural population. An intercultural society is about inclusion “by design, not as an add-on or afterthought. It is essentially about creating the conditions for interaction, equality of opportunity, understanding and respect.” (DJELR, 2005 p. 38). Within education this is an “education that respects, celebrates, and recognizes the normality of diversity in all aspects of human life, promotes equality and human rights, challenges unfair discrimination, and provides the values on which equality is built’ (NCCA, 2005, p. 169). These intercultural values carry implications for all purposes and processes in education including for assessment.

The Literacy and Numeracy Strategy 2011-2020 (DES, 2011) introduced mandatory standardised testing into Irish primary schools in an effort to raise standards to the levels achieved by the “highest performing countries” (p. 8). International research indicates that where there is pressure to raise standards, this pressure transfers into a focus on the individual and collective performance of children (and teachers) on standardized tests, resulting in negative repercussions for underperforming students and schools (Alford, 2014; Berliner, 2011; Cummins, 2001; Gutierrez, Zitali Moreles, & Martinez, 2009; Luxia, 2005; McNeil, 2000; Shohamy, 2001). The IES (2010) acknowledges the dangers associated with being labelled as a ‘low achiever’ early in education when it cautions that being labelled as a ‘low- achiever’ can become a self- fulfilling prophecy (OECD, 2009).

It is against this dynamic and interactive background of changes and pressures that this small study on the comparative performances of EAL and Non-EAL children on standardised tests was carried out. The study critically examined the results of standardised tests of literacy, numeracy and of ability, both verbal and non-verbal. In comparing the results of the EAL and Non-EAL groups, patterns of statistically significant difference in the performance of the groups were identified. These patterns were particularly evident in relation to the NRIT. Critical analysis of the patterns of underperformance by EAL groups, in light of conceptual work on the development of second languages and the literature on assessment of ML children, clearly indicated that the NRIT is a test that is unsuitable for use with EAL children. Evidence also suggests that great care should be taken in the interpretation of literacy test results.

The *Primary School Curriculum* (Government of Ireland, 1999) is “designed to nurture the child in all dimensions of his or her life” (p. 6) and to enable the child to “realise his or her potential as a unique individual” (p. 8). Exposing EAL children to standardised tests that require levels of language proficiency that they have not had the time nor the opportunity to develop prior to testing poses a challenge to the delivery of equality of opportunity for success on tests. In so doing this situation not only discriminates against EAL children it challenges the ‘nurturing’ nature of the primary school and poses a threat to the development of self-belief in the EAL child. “This is unacceptable in a system that purports to enable the child to reach their full potential as an individual [Government of Ireland, 1999]” (Mac Ruairc, 2009 p. 64).

The challenge now is to ensure that teachers are informed about the issues that surround the testing of EAL children and around the misconceptions and confusions regarding the development of academic levels of language proficiency among EAL children. Many teachers working in the system qualified before our society became

multicultural and therefore did not receive training on the specific needs of ML children while at college. Such training still remains as a small and sometimes elective module in training colleges resulting in a shortage of professional knowledge on the ground. Critical CPD in the area has been quite limited. Knowledge is power (Bacon, 1597) and if teachers have knowledge regarding the issues faced by ML children, then they become empowered to provide the best possible educational experiences for their pupils.

Research nationally and internationally has evidenced great commitment and passion to the care and wellbeing of ML children among teachers (Archer & Francis, 2007; Cummins, 2001; Devine, 2011). “Interactions between students and teachers as well as among students in the classroom frequently are identified as the “actual sites” where learning success or failure is determined” (Gay, 2010, p. xix). When teachers are culturally responsive educators they can provide conditions and interactions and assessments in their classrooms that enable and empower all children to reach their full potential (Cummins, 2001; Gay, 2010). To become culturally aware educators, teachers need to acquire a knowledge base, develop personal and professional self-awareness in relation to diversity and they need to engage in dialogue with others in relation to diversity (Gay, 2010). Critical CPD provides such opportunities. I conclude this study with recommendations for CPD and some recommendations for further study in relation to standardised testing and ML children.

Recommendations

To be culturally aware educators, teachers need CPD on issues relating to diversity and the complexity involved in the acquisition of second languages, particularly in relation to the acquisition of the dominant language in a society when a first language is a minority language that is not recognized in the school system. CPD is also needed on assessment in education particularly in light of the now mandatory position of standardised testing in

primary schools. These recommendations are not new. The IES (DES, 2010) states that CPD for teachers on issues relating to diversity as one of its goals. The NCSE (2014) recommends “mandatory training for teachers in the administration, scoring and interpretation of standardised tests” (p. 39) and stated in 2014, in its preliminary report on the proposed new model for allocating teaching resources for children with SEN, that it would be provided. CPD is presently being provided to schools in relation to the development of English and Irish in the New Language Curriculum (DES, 2016), however reference to ML children and their first languages and the particularities of their needs is minimal in this training.

Commitment to and funding for the provision of CPD for teachers is urgently required to ensure that teachers are fully informed as to the particular issues faced by ML children in the school system. Other recommendations included here are for further study to be carried out. Many questions arose over the course of this study that could be answered by further study. Recommendations for further study include

- Continuing with the study to see if improvements in 2009 & 2010 Cohorts continue, or if the levels of academic language proficiency become a challenge as they continue to rise through the grades.
- Doing a study on the comparative performances of EAL and Non-EAL children on the language elements of numeracy tests. This would enable us to see if these strands in the numeracy tests provided a greater challenge to the EAL children despite their apparent success in numeracy. This could have implications for higher levels of mathematics in ‘Project Maths’ in secondary school which involve some substantial elements of language.
- Widening the study to include other cohorts of children in the same school to examine if relative improvements continue in later cohorts.

- Widening the study to examine if similar results are found in other schools between EAL and Non-EAL performance.
- Comparing the performance of EAL children using variables to see how particular groups within the EAL group performed on the various tests.
- Tracing the EAL children individually into the secondary school and interviewing them in relation to their experiences on standardised tests and how their performances on the tests effected their educational experiences, confidence and self-belief.
- Qualitative work with the EAL children and their parents on their feelings and experiences with regard to standardised tests, and how the testing experience effects their self-perception, self belief, their relationships with each-other, and their relationships with the school system.
- Comparisons of the results of EAL children on literacy elements of PSAK and the results of their standardised literacy tests would also make an interesting study

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List of Appendices

- A. Letter of Permission from Principal of Junior School
- B. Letter of Permission from Principal of Senior School
- C. Pie Charts of Attendance of EAL children at EAL Classes
- D. Statistical Findings- Descriptive Statistics and Inferential Statistics

Appendix A

Holy Family JNS,
Rivervalley,
Swords,
Co. Dublin.

I certify that Paula Fitzsimons has received permission to proceed with a study of the standardised test results held on file in this school. I understand that the purpose of this study is to examine the performance of EAL and Non-EAL pupils in this school and to compare them for difference. She will keep the school fully informed of her findings as she proceeds with the study.

I acknowledge that this study will be submitted as partial fulfilment of the requirements of the award of the degree Master of Education Studies (Intercultural Education).

Mark Cunningham (Principal)

Appendix B

Holy Family SNS,
River Valley,
Swords,
Co. Dublin.

I certify that Paula Fitzsimons has received permission to proceed with a study of the standardised test results held on file in this school. I understand that the purpose of this study is to examine the performance of EAL and Non-EAL pupils in this school and to compare them for difference. She will keep the school fully informed of her findings as she proceeds with the study.

I acknowledge that this study will be submitted as partial fulfilment of the requirements of the award of the degree Master of Education Studies (Intercultural Education).

David O’Keeffe (Principal)

Appendix C

Patterns of Attendance at EAL Classes by Length of Time.

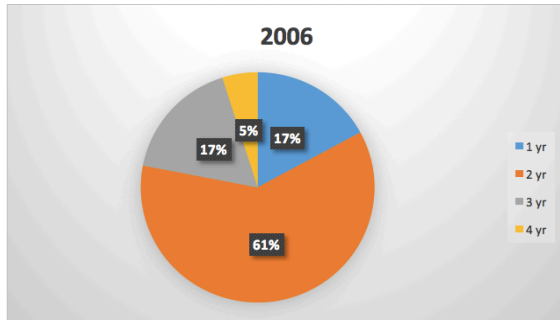


Figure 15- Time spent at EAL classes 2006 Cohort

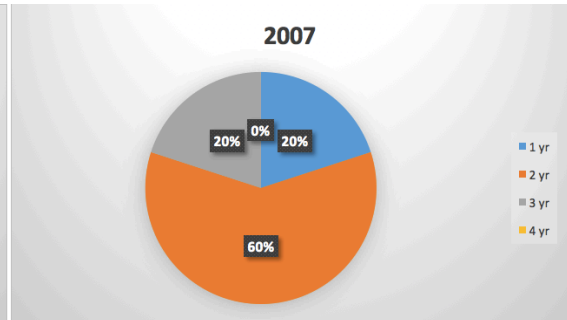


Figure 16- Time spent at EAL classes 2007 Cohort

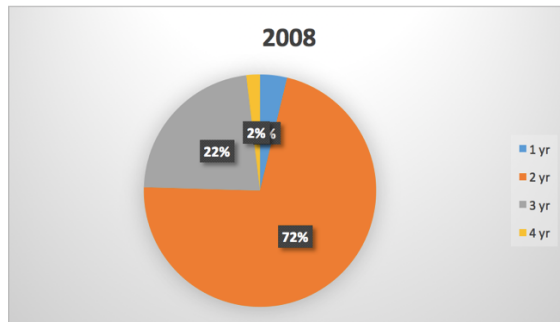


Figure 17- Time spent at EAL classes 2008 Cohort

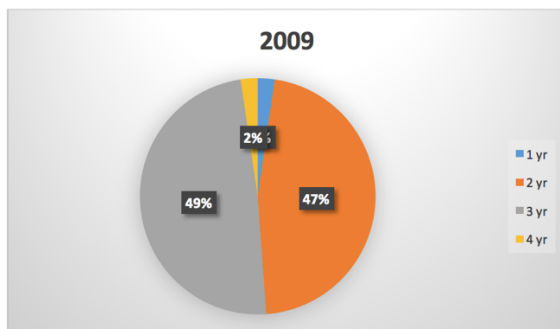


Figure 18- Time spent at EAL classes 2009 Cohort

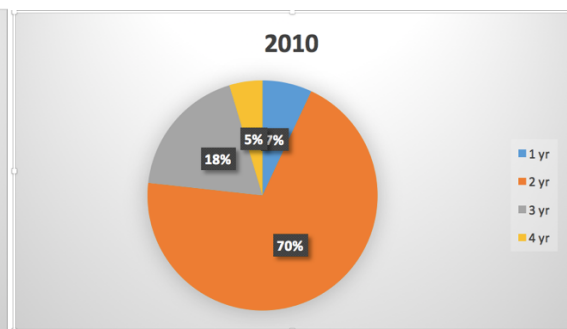


Figure 19- Time spent at EAL classes 2010 Cohort

Appendix D

Statistics: See Attached Documents.