# THE STARPATH PROJECT

STARPATH PHASE 2

FINAL SUMMATIVE EVALUATION REPORT

March 2016





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Starpath Project The University of Auckland Epsom Campus, Faculty of Education and Social Work Private Bag 92019, Auckland 1142 www.starpath.auckland.ac.nz

Bibliographic citation

Kiro, C., Hynds, A., Eaton, J., Irving, E., Wilson, A., Bendikson, L., Cockle, V., Broadwith, M., Linley-Richardson, T. & Rangi, M. (2016). Starpath Phase 2. Final Evaluation Report. Auckland, Starpath Project, the University of Auckland.

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All enquiries should be directed to the Director, Starpath Project, at cynthia.kiro@auckland.ac.nz

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# Starpath Final Summative Evaluation

### Acknowledgements

Tēnā koutou

Many people have contributed to the Starpath Phase 2 project and to this report. Firstly we wish to express our sincere thanks to our contributors including students, whānau/parents/caregivers, teachers and school leaders. Without your partnership we would not have learned so much about the enablers and inhibitors to Māori, Pasifika and other students from lower decile schools entering and succeeding at degree-level study. We acknowledge your willingness to be involved in this project; your time, and your openness in sharing your personal experiences.

Special thanks are also due to the Starpath Governance Board. In particular Starpath wishes to acknowledge Distinguished Professor Dame Anne Salmond (Sponsor), Professor Raewyn Dalziel (Chair), Professor Graeme Aitken (Dean of the University of Auckland's Faculty of Education and Social Work), Professor Michael Walker, Bill Gavin, Gil Laurenson and Associate Professor Damon Salesa. Past Board members have included Dr Graham Stoop, Dr Stuart Middleton, Walter Fraser, Dr John Langley, Rob McIntosh, Anne Jackson and Rowena Phair.

Starpath acknowledges the special contributions of Professor Elizabeth McKinley, and to our Starpath Phase 2 partners, Professor Stuart McNaughton (Director of the Woolf Fisher Research Centre) and Distinguished Professor Viviane Robinson (Director of the University of Auckland's Centre for Educational Leadership). Your work in the Starpath Project has been invaluable. We also wish to acknowledge the contributions of key researchers and project staff members who have worked in the Starpath Project as it has developed over time. These include Professor Helen Timperley, Dr Irena Madjar, Dr Melinda Webber, Dr Sam Smith, Dr Andres Santamaria, Dr Mark Gan, Dr. Boas Shulruf, Dr Stephen McTaggart, Dr Acacia Cochise, Dr Rolf Turner, Dr Georgina Stewart, Dr Debbie Dunsford, Johnson Yuan, Marianna Deynzer, Seini Jensen, Justine Munro and Alice Van Der Merwe. Other key staff members have included Kezia Kelly, Danelle Clayton, Megan Jeffries, Karen Bonnici, Elizabeth Clarke and Monica Bland

We would also like to thank key Ministry of Education personnel including Anne Jackson, Rowena Phair and Lisa Rodgers. We also acknowledge a number of external researchers and academics who have provided quality assurance and support for Starpath's analyses on the impact and effectiveness of the project. These include Dr Michael Johnston from Victoria University of Wellington for evaluating the matched school comparison analysis and Dr Barry Milne and Dr Nichola Shackleton from the University of Auckland's COMPASS Research Centre for external review and quality assurance of the hierarchical linear modelling work. Special thanks also to Professors Luanna Meyer, Alison Jones, Helen Timperley, John Hattie and Dr Mei Lai.

Starpath Phase 2 was made possible by funding from the New Zealand Government and the ASB Community Trust and we acknowledge their contributions with appreciation and gratitude. We are also extremely grateful to other organisations and individuals who have contributed funding to the University of Auckland that was leveraged by Starpath to release the Government funding.

Nga mihi

Professor Cynthia Kiro Associate Professor Anne Hynds Joy Eaton Dr Earl Irving Dr Aaron Wilson Dr Linda Bendikson Tania Linley-Richardson Morgan Rangi Victoria Cockle Mark Broadwith

# **Executive Summary**

The Starpath Project for Tertiary Participation and Success, established in 2005 as a Partnership for Excellence with the New Zealand Government, was an evidence-based school-wide intervention project aimed at enabling more students from lower decile schools, especially Māori and Pasifika students, to progress into degree-level study. The Starpath programme extended over 11 years (2005-2015) and engaged 39 secondary schools in research and development work across different phases and regions. Findings from this work have provided many valuable insights into the challenges and strategies for school improvement, raising student achievement and progressing educational excellence and equity within Aotearoa New Zealand.

### The Phase 2 Focus

A partnership between research and development has been fundamental to the design of Starpath Phase 2. This partnership alongside collaborative inquiry has formed the basis of the professional development and learning approach with participating schools. Phase 2 involved 34 secondary schools across Auckland and Northland. The five Phase 1 schools were also invited to participate in aspects of the Phase 2 work. Data collected from all 39 schools show that the schools greatly valued their participation in the Starpath programme. Data utilisation through an evidential database (EDB), academic counselling and target setting, together known as DUACTS, was the focus of the Starpath intervention. Other essential professional development and learning work was provided in the areas of literacy teaching across the curriculum and school leadership. The University of Auckland's Woolf Fisher Research Centre and the Centre for Educational Leadership joined the Starpath project in 2011-12 and brought important research and development expertise in these areas. This report contains key findings from a quasiexperimental evaluation aimed to measure impact and effectiveness of the three Phase 2 Starpath-led initiatives (DUACTS, literacy and leadership) utilising both quantitative and qualitative measures. A series of quantitative analyses measured the impact of Starpath on student achievement. Interviews with a range of stakeholders, school-leader surveys, observations of literacy teaching, academic counselling and parent-student-teacher (PST) conferences were also undertaken and analysed.

# Major Findings

Starpath has found that for Māori, Pāsifika and other students in low decile schools to be successful New Zealand needs;

- Teachers who hold and encourage high aspirations for their students;
- Clear NCEA pathways that enable these students to fulfil their aspirations;
- Longitudinal data that track and monitors student progress over time;

• To give students the opportunity to articulate their goals and to be heard within the educational environment;

• Data tracking and student management systems that are easy for teachers to work with and that capture the relevant data;

• Robust professional learning development that empowers teachers;

• A well aligned educational system where policy, leadership and teaching are working together to improve student outcomes.

#### Changes in Student Achievement

Generally, the pass rates in national qualifications for students in Phase 2 schools have improved year-on-year, and our analyses indicate that many schools are closing the gap with national pass rates. Comparisons of student achievement results highlighted some striking improvements and a few, generally higher decile, schools that performed consistently well. The patterns of student achievement also indicate considerable variability within and across schools. This variability occurred across the National Certificate of Educational Achievement (NCEA) levels at the same school, between pass rates year-on-year at the same school, between similar schools, between low and high decile schools, between ethnic groups at the same and different schools, and between boys and girls at the same and different schools.

Progress has been more marked at NCEA Levels 2 and 3 than at Level 1 and University Entrance (UE). Pass rates for UE initially showed some gains, but declined in 2014, particularly for Māori and Pasifika students in low decile schools. The reasons for this may be linked to changes in requirements for UE. More needs to be known about the credits that students are gaining through NCEA levels 1, 2 and 3 and how these enable or hinder academic and vocational progression particularly for Māori, Pasifika and low income students. Analyses that tracked students from Starpath schools into degree-level study have shown differences in the enrolment rates of students, particularly by gender and ethnicity. Females participated in degree-level study at one-and-a-half times the rate of males. Approximately 10 % of Māori and Pasifika students undertook degree-level study, while between 20 % and 30 % of their NZ European and Asian peers did so.

Overall the summative evaluation could not specifically attribute gains in student achievement, nor lack of progress, to the Phase 2 intervention. This is explained by two main factors. Firstly, Starpath has had to compete for attention in an environment of multiple professional development interventions. Low decile schools in particular, took up additional professional learning and development initiatives offered to address the multiple issues they faced and to gain extra resourcing. Multiple interventions make it difficult to isolate a Starpath effect. Secondly, by only using pre and post NCEA data as the measure of success it has been difficult to evaluate the intervening impacts such as the extent to which schools have implemented Starpath processes with fidelity. This is further confounded by improvements in student achievement that have been occurring nationally.

Despite the difficulty of attributing a specific Phase 2 effect on student achievement to Starpath initiatives, the programme has afforded many useful findings and insights. These will inform future research and development programmes that attempt to engage teachers and school leaders in data-focused enquiry to enable more students, especially Māori and Pasifika and others from lower decile schools, to progress into degree-level study.



#### DUACTS

In order to discover whether the education system is working well for different students or groups of students, enabling them to fulfil their potential, it is vital to be able to track their achievement (as individuals or groups) over time. This needs to be correlated with other data to understand patterns of academic success or failure. Without a capacity for longitudinal tracking, it is difficult to discern whether a student or group of students is on track to achieve their goals and aspirations, or to notice when a student or group of students begins to head towards failure, discover the reasons why and take effective action. A key aim of the Data Utilisation, Academic Counselling and Target Setting (DUACTS) programme was to enable each Phase 2 school to develop an Evidential Database (EDB). The EDB was designed to act as a tool to enable schools to collect longitudinal data, and to use those data to improve practice and outcomes for groups of students. Analysis of teacher and school leader interview data indicated that participants welcomed and valued the technical and practical support that Starpath gave in this area. However, many school leaders were also concerned about staff capacity and this was particularly problematic if a competent Student Achievement Manager (SAM) left the school and was difficult to replace. Summative evaluation data collected from schools indicated that at least 14 Phase 2 schools found it very difficult to maintain their EDBs.

Starpath has found that by and large, the education system lacks the capacity for adequate longitudinal tracking of student achievement at present. There is an urgent need to improve the Student Management Systems used by schools to ensure that an adequate and strategic range of data is consistently and accurately recorded over time, and that this information is easily transferable from one SMS to another, given high rates of transience for many low decile students (see below). This requires national coordination to ensure that all student management systems are fit for purpose, adequately support evidence-based, longitudinal approaches to educational success, and are compatible with each other.

Interviews with teachers and school leaders also indicated that many clearly appreciated and valued DUACTS as a systems approach to school improvement. The use of data from EDBs to set goals and monitor progress for individual students, and sharing this with parents and care-givers as well as students in carefully designed feedback sessions, had major benefits. Analysis of school-reported data highlighted remarkable improvements in whānau/parent/caregiver attendance at such parent-student-teacher conferences (from around 17% to 80% in many cases). As a result schools have greater opportunities to strengthen their relationships with whānau/parents/caregivers and improve students' results over time. Many students who were interviewed appreciated the chance to talk to an academic mentor about their own goals and aspirations, and believed that this was an important process for encouraging their success. Students also noted that the quality of academic counselling could vary, and that this impacted on their engagement in the process. Māori and Pacific students interviewed, sometimes reported lower teacher and community expectations of them.

In successive analyses and reports, Starpath found that subject choice is a key enabler or inhibitor of educational success for lower decile (and especially Māori and Pacific) students. In Phase 1, the Starpath team found that while a high percentage of these students aspire to achieve UE, the subjects available to them in their schools, the quality of teaching of those subjects (particularly in the sciences) and the quality of the advice they receive about NCEA subject pathways that will enable them to achieve their aspirations, often presented formidable barriers to academic achievement for these students and entry to degree-level study.

As a result, in Phase 1 the Starpath team wrote and published a booklet in English, Māori and Samoan called Navigating NCEA. This widely distributed booklet offered advice to students, parents and teachers about how to navigate their way through subject choices in NCEA to realise their ambitions.

Data gathered through the project clearly demonstrates that school leaders and teachers

require much more innovative and intensive support to collect and analyse different types of data to progress improvement efforts within the school. These include working with middle managers to affect classroom teaching. To this end we would collect and analyse different types of data to progress improvement efforts within the school. These include student achievement data (such as e-asTTle scores, PATs, NCEA and UE pass rates). perception data (such as how students, parents/ whānau and middle leaders/teachers feel about school and the degree to which they feel valued and engaged), data on the quality of literacy instruction and academic counselling, and systems data (e.g. course enrolments). Other challenges experienced within the project related to difficulties in using current SMS to provide informative and strategic analyses of student achievement for individuals or groups of students; the need for a much deeper understanding of how to navigate subject choice and pathways in NCEA so that students can achieve their aspirations (including target-setting); and a failure to integrate DUACTS into existing school systems and cultures.

Teachers, middle and senior leaders also reported needing *sufficient time* to learn how to do this work better within their schools.

The time and effort required to use data effectively would be significantly eased with an effective SMS standardised for use in New Zealand schools. The Ministry are working on this, including the transferability of data across early childhood centres, primary and secondary schools to create an educational data pathway for learners.

#### Literacy

The literacy work in Starpath Phase 2 was based on observations of classroom teaching in English, mathematics and science. Analyses of pre-post literacy PLD observation data showed potentially important shifts in some but not all aspects of teacher's literacy instruction. The observers recorded details about the lessons including properties of texts used, teaching activities, how students were grouped, forms of differentiation, and the focus and characteristics of any literacy instruction. Analysis of observations indicated the number of texts given to students to read increased by 15% in English. 29% in mathematics and 14% in science during the course of a one year Starpath literacy intervention. The average length of texts used in class also increased. In Group B schools for example there was a large increase, from 6% to 20%, in texts longer than 600 words. This was particularly evident in biology which increased from 4% to 19%, and English which went from 10% to 36%. In addition there, was a decrease in the proportion of texts that were teacher-designed (such as teacher-written notes and hand-outs). For Group B schools the percentage of teacherdesigned texts decreased from 77% to 75%, and a small increase in the number of books read from 13% to 18%, meaning students were observed to have relatively more opportunities to read published print texts. However, there was no change in rates of extended discussion, which remained very low across all three subjects (fewer than 5% of blocks in any subject). There was also no overall increase in the average rates of explicit literacy instruction (in the second set of observations the percent of block in which there was instruction about literacy was 50%, 35% and 55% in English, mathematics and science respectively), or the amount of focus on critical literacy instruction (below 3% of blocks in all subjects in the second time point). A lack of improvement in critical literacy instruction is particularly problematic for students who wish to gain UE and enter and succeed within degreelevel study. Findings from the Starpath literacy initiative on student achievement did provide empirical support for the claim that developing literacy instruction was a potentially powerful way of improving student achievement in subjectspecific areas. However, the intervention did not produce uniform shifts in literacy teaching practices or translate into generally higher pass rates for students in high literacy standards.

#### Leadership

The focus of the leadership intervention was on: issues facing cohesive school improvement efforts; an introduction to the principles of Open-to-learning<sup>TM</sup> Conversations (OTL<sup>TM</sup>); effective problem solving practice; and effective school improvement planning, including goal focus. Surveys were distributed to senior and middle leaders to measure leaders' knowledge of their school's academic goals, their perceptions of the seriousness of certain barriers to raising student achievement and of their current effectiveness in addressing those.

Analyses of pre-post survey leadership data indicated variability of shifts in practice, and cohesiveness within leadership teams and across schools. There were localised shifts in leaders' knowledge of their school's goals and in the quality of schools' improvement planning, and these were usually associated with higher ratings of improved practice by leaders. Although some schools' planning significantly improved, most schools' improvement plans lacked sharp focus on key problem areas. Middle leaders saw barriers related to students (in descending order: low literacy levels; absenteeism; motivation; preparedness to learn) combined with pressure of time, as the most serious problems to be addressed in efforts to raise student achievement. They rated these barriers as initially highly serious (≥4.5 out of 7) and there was little change across the intervention period: the most serious problems faced by these schools were perceived to have shifted little. Students' literacy, absenteeism and motivation persisted for many schools and were simultaneously both highly serious and minimally addressed in an effective way. However, shifts in senior leaders' ability to predict middle leaders' perceptions of problems improved overall. That considered, there was no uniform improvement in measures of leadership cohesiveness. This finding was reinforced by ratings and comments about improved practice in schools at the end of the intervention: average ratings between senior and middle leaders were significantly different on the core issue of addressing variability of teaching in schools. While there was strong agreement in some schools about the degree and nature of improvements that had been made, for many others there was little agreement. This emphasises the challenge for leaders in implementing sustained improvement. A period of more intensive intervention in five of the schools towards the end of Phase 2 served to highlight the significance of the multiplicity and complexity of the issues faced by school leaders on a daily basis, and therefore the difficulty for them of generating a cohesive, school-wide focus on just one or two key problems. Understanding the theory of affecting such a change in approach, and the practice of delivering that change, remains a significant challenge: but as some schools seemed to illustrate, an achievable one.

### Contextual Challenges and Influences

There have been a series of changes that have likely impacted on the nature of partnership work within schools, and influenced student achievement over time. Many Starpath schools experienced change in their school leadership teams during the time of the project. In some schools this change was extensive – with as many as 50% staff turnover in one school, twice during the past five years. In some cases the change in leadership resulted in a strengthening of Starpath partnership work, but in others the change has weakened commitment to Starpath. Understandably, project sustainability has been a challenge for smaller, isolated schools with staff recruitment and retention issues.

In merging Starpath data from a number of sources, including the Evidential Databases (EDBs) of Starpath schools that had them, Starpath has been able to track students as they moved from one Starpath school to another. Analysis found one student who attended seven Starpath schools (and still achieved Level 2), five students that attended five Starpath schools, 56 students who attended four Starpath schools and a further 757 who attended three Starpath schools. The data regarding students' transitions to tertiary study indicates that of the 67,729 students in the database for whom we have school data, 6,738 had a non-Starpath school listed as their last school attended. Further investigation is needed to determine the causes of student transience and the impact on student achievement.

The wider educational environment that Phase 2 schools and the project have operated in, has changed. The New Zealand Government has set Better Public Service Targets (BPSTs) for 2017, and one of these is that 85% of 18-year-olds should achieve NCEA Level 2 or equivalent. Individual school leaders have commented on the pressures to meet the Government's target. A focus on such targets may mean that some academically capable Māori and Pasifika students were being counselled into less ambitious academic pathways. 2014 changes to University Entrance (UE) requiring credits in three approved subject areas, and at a higher level, contributed to a drop in UE success rates nationally further impacting disproportionally on low decile schools.

### **Future Directions**

The ultimate goal of Starpath has not yet been fully realised, however efforts to achieve an enhanced flow of Māori, Pasifika and low income students into degree-level study, must continue. Starpath Phase 3 will work in partnership with a smaller number of low decile secondary schools and increase its focus on improving Māori and Pasifika students' progression and success into UE.

#### Hapaitia te ara tika pumau ai te rangatiratanga mo nga uri whakatipu

Foster the pathway of knowledge to strength, independence and growth for future generations

# Introduction

In keeping with the whakatauki above, this report presents findings from over ten years of research and development in secondary schools. These add to the current research literature on issues of equity and excellence and school improvement in Aotearoa New Zealand. The main aim of the Starpath Project for Tertiary Participation and Success has been to enhance educational outcomes for Māori, Pasifika and other students in lower decile secondary schools, and increase their numbers entering degree-level study. To achieve this goal, the second phase of Starpath (2011-2015) has taken a whole school improvement approach to develop high quality data systems and processes that support the work of change. This report highlights key areas of impact and change, as well as enduring challenges and areas where we would have hoped to do better. It describes the history and background of the Starpath Project, with a particular focus on outlining the development, implementation and outcomes of Phase Two. It also outlines the challenge and complexity of this type of research and development work in schools, and provides recommendations for future directions.

# The Starpath Project: History and Background

The Starpath Project for Tertiary Participation and Success was established in 2005 as a Partnership for Excellence between the University of Auckland and the New Zealand Government. It was one outcome of the August 2001 "Catching the Knowledge Wave" conference, chaired jointly by the then Prime Minister, Helen Clark, and the then University of Auckland Vice-Chancellor, John Hood. Attended by over 450 delegates, the conference sought to identify strategies to raise the country's economic performance and individual expectations and capacities.

The rationale for the Project was outlined in the June 2005 Starpath Project Charter that, inter alia, stated: "In the global knowledge economy, prosperity of both individuals and nations rests heavily upon knowledge-rich activities, with a growing demand for highly skilled workers. In New Zealand, a relatively young population has the potential to give the nation a major competitive advantage, but only if New Zealanders from all backgrounds have the opportunity to realise their educational potential. At present, New Zealand has the second highest rate of educational inequality in the OECD, with Māori, Pasifika and students from low income backgrounds showing high rates of educational under-achievement. At the same time, population balances are rapidly shifting. According to the latest census, for instance by 2050, 57% of all New Zealand children will identify as Māori or Pasifika; while 68% will be non-European. Unless current patterns of educational under-achievement in New Zealand are transformed, our chances of developing and sustaining a high income, high value, knowledge economy are in danger. Starpath is aimed at these challenges." (Starpath Project Charter, 2005).

Given the enormity of the challenges, the original vision for this Project was an ambitious one:

A world-class project to ensure that New Zealanders from all walks of life enter and succeed in advanced tertiary qualifications and high skill employment.

Although the work undertaken during the first five years of the Project did not always follow the initial blueprint (e.g., in tracking student progress and addressing "chokepoints" from primary school through to postgraduate degree studies), nor achieve all it set out to do, the Project stayed close to its original aims and established a strong research base for the work in Phase 2. In particular, the Project has attempted to remain true to its original commitment of working in partnership and collaboration with participating schools, using longitudinal data to enable students to fulfil their potential, and focusing on enhancing the achievement of Māori, Pasifika and low income students in ways that enable them to enter and succeed in degree-level study.



### **Project Aims**

The main aim of the Project was to identify and minimise or remove barriers that contribute to lower rates of participation and success in degree-level education by Māori, Pasifika, and other students from lower decile schools. To achieve this key goal, the Project established additional aims, including:

1. To generate evidence from original research;

2. To draw on international and local research and expertise of leading academics, educators, schools and communities in order to increase understanding of barriers to educational participation and achievement of students from the under-represented groups, and

3. To develop and test tools, interventions, and/or initiatives that would have a positive impact on student participation and achievement and lead to a measurable improvement in student outcomes.

### **Project Structure**

Starpath was originally a partnership of the University of Auckland, the Auckland College of Education and Manukau Institution of Technology. When the Auckland College of Education merged with the University, Starpath was set up as a Project within the new Faculty of Education. The other partners have been the five pilot Phase 1 schools and the 34 schools that joined in Phase 2. Manukau Institute of Technology ceased to participate in 2011.

Funding for the Project has come from the Government under the Partnerships for Excellence programme administered by the Tertiary Education Commission. This programme required the University to raise dollar-for-dollar matching funding for Starpath and other equity and school achievement programmes. The major donors who have contributed matching funding have been Foundation North (formerly The ASB Community Trust), the Todd Foundation, the West Coast Development Trust, and Teach First New Zealand.

In December 2006 a Governance Board was established with members from inside the University, partner institutions, and external organisations, including the Ministry of Education. The Board was charged with approving strategic, operational and business plans, monitoring the project's performance, approving project reports, ensuring the project met its contractual performance indicators and advising the Vice-Chancellor of the University on project development and performance.

Starpath's staffing has consisted of a Director, researchers with quantitative and qualitative skills, an administrator and professional learning and development facilitators. There have been six overall Directors: Professor Trish Stoddart (2004-5), Professor Helen Timperley (August 2005-December 2006), Professor Elizabeth McKinley (January 2007-August 2014), and Professor Cindy Kiro (January 2015-March 2016). Professor Stuart McNaughton acted as Director during 2011 while Professor McKinley was on research and study leave. Joy Eaton was employed as the Deputy Director from May 2011 and then became Acting Director from August 2014-January 2015. She took on the role of Director of School Engagement in January 2015. A dedicated role for research was established late in 2014 and Associate Professor Anne Hynds took up the position of Director of Research in January 2015.

### Summary of Phase 1 Work and Outcomes

During the first five years of the Project, the Starpath team undertook over 25 quantitative and qualitative studies that focused on identifying barriers to student participation and achievement, examining the context and impact of the recently introduced NCEA system in secondary schools, and testing a programme of academic counselling and target setting. This broad range of studies included:

• A series of *surveys* on student pathways and achievement at secondary and tertiary level;

• A series of *factor analysis studies* on factors impacting on student achievement;

• An *ethnographic study* of students', parents' and teachers' understanding of NCEA and students' subject choices at school;

• A prospective, *longitudinal, narrative inquiry* of student transition from school to university;

• A series of *qualitative evaluations* of learning support programmes in schools and university;

• A *quasi-experimental effectiveness study* of an Academic Counselling & Target Setting (ACTS) initiative;

 $\cdot~$  A mixed-methods evaluation of ACTS' initial impact;

• A *mixed-methods evaluation* of ACTS' sustainability in the original schools; and

• A mixed-methods, participatory action research of ACTS' transferability to four other schools.

The cumulative findings identified a series of structural and systemic barriers to student achievement at secondary school and progression to degree-level studies, including:

• Lack of longitudinal student achievement data in schools to permit tracking of students' progress and effective target-setting;

• Unequal access to relevant NCEA subjects and relevant achievement standards in some schools;

• Inadequate understanding of the NCEA system and the medium and long-term implications of subject choices by parents, students, and teachers;

• Lack of evidence-based guidance (academic counselling) of students;

• Failure to achieve NCEA literacy standards required for University Entrance;



• Proliferation of student support programmes outside the core curriculum (not evaluated for their impact on student achievement); and

• Numerous challenges during the transition from school to university for students from low-decile schools, especially if first-in-the-family to attend university.

The identification of barriers and testing of possible interventions, combined with research evidence from international sources, helped to provide a strong base and direction for Phase 2 of the Starpath Project. In particular, the conclusions were that a comprehensive, school-wide intervention programme was needed to overcome some of the key barriers and make a measurable impact on student achievement and pathways towards degree-level education. Although neither the Starpath Project nor its partner schools could change the family situation or the socioeconomic status of students in low income communities (and thus lower decile schools), refocusing schools on equity issues, and helping schools to work with students and their families/whānau differently showed definite promise.

### Subject Choice

In successive analyses and reports, Starpath has found that subject choice is a key enabler or inhibitor of educational success for lower decile (and especially Māori and Pacific) students. In Phase One, the Starpath team found that while a high percentage of these students aspire to achieve UE, the subjects available to them in their schools, the quality of teaching of those subjects (particularly in the sciences) and the quality of the advice they receive about NCEA subject pathways that will enable them to achieve their aspirations often presented formidable barriers to academic achievement for these students, and entry to degree-level study.

As a result, in Phase 1 the Starpath team wrote and published a booklet in English, Māori and Samoan, *Navigating NCEA*. This widely distributed booklet offered sound advice to students, parents and teachers about how to navigate their way through subject choices in NCEA to realise their ambitions. These understandings also informed the design and delivery of the DUACTS interventions.

### **Essential elements**

The essential elements of the Data Utilisation, Academic Counselling and Target Setting (DUACTS) programme developed by the end of Phase 1 involved:

• Working with schools to establish an Evidential Database (EDB) and tracking and monitoring procedures – to ensure that each student's academic progress is known in real time and timely interventions can be provided to ensure best possible outcomes.

• Working with schools and teachers to develop knowledge and skills to work with students as academic counsellors or mentors – to ensure that students have the information and are supported to set and achieve appropriate goals, choose appropriate subjects, and are able to follow their chosen educational pathway. • Helping schools to engage with students' parents/whānau – to ensure clearer understanding of educational opportunities and learning needs of their children and how best to support their children's aspirations, learning and achievement.

• Working with schools to improve teaching practices, particularly in relation to general and subject-specific literacy, to ensure that students develop and can demonstrate advanced literacy skills needed to be successful in external NCEA assessments and in tertiary studies.

• Working with schools to strengthen leadership

practices – to ensure clear and focused goal setting (including focus on equity and student achievement) and coherence between stated goals, overall school strategies, and individual practices; and

• Appropriate leadership at all levels to initiate, lead, support and embed effective practices in the culture of each school.

The DUACTS programme was developed and tested for its academic effectiveness (Smith, 2010), overall impact on students, teachers and the school (McKinley, Madjar, Van Der Merwe, Smith, Sutherland & Yuan, 2009), and sustainability (McKinley, Madjar, Jensen & Mizutani, 2010) in one school. The programme was also implemented and evaluated in a further four schools in Auckland and Northland (McKinley, Madjar, Smith, Irving, Turner, Dunsford & Mizutani, 2010) to test its transferability to other schools. Based on the evidence generated through the evaluation research and consultation with the five Phase 1 schools, the implementation of a second phase in up to a further 34 schools was proposed. Phase 2 was therefore based on research evidence, including the testing and evaluation of initiatives designed to improve academic achievement in secondary schools conducted as part of Phase 1 of the Project.

# Starpath Project Phase Two

The nature and complexity of the research and development challenges that Starpath Phase 1 addressed made it important to bring the best available expertise to Phase 2.

In the first phase, literacy and leadership had both been identified as significant barriers to the progression of Māori and Pasifika students, and students from lower decile schools into degree-level study. The University of Auckland's Woolf Fisher Research Centre and the Centre for Educational Leadership joined the Starpath project in 2011-12 to provide research and development expertise in these areas.

The challenge for Phase 2 was to implement and evaluate a series of Starpath-led initiatives that focused on combining DUACTS, literacy across the curriculum and school leadership into a schoolwide intervention programme. The overall goal was to demonstrate significant improvements in student outcomes and increased progression into degreelevel study.

#### Key Phase 2 objectives included:

• Ensure the establishment of accurate, detailed and well-documented longitudinal databases on student performance in all participating schools;

• Ensure the capacity of each school to track and monitor student achievement for individual students, specific groups, and the whole school; to recognise patterns and trends in student achievement or under-achievement, and to select appropriate strategies to respond to these;

• Ensure the capacity of each school to provide the necessary leadership and ongoing commitment to equity in educational opportunities and outcomes, and the skills needed to significantly reduce current disparities between Māori and Pasifika students and other New Zealand students;

 Assist each school to implement evidencebased initiatives designed to improve student achievement, and to evaluate and refine each initiative to achieve sustained improvement in educational outcomes for its students;

• Facilitate active participation of each school in targeted professional development, research and evaluation activities;

• Support participation of targeted teachers in research projects and/or study toward research and

higher degree completion;

• Share the research findings of Starpath with members of the Faculty of Education, partner and other schools and education agencies so that successful initiatives and interventions become embedded in educational policy, practice and thinking; and

 Track and monitor student progression into degree-level study, and undertake research into factors that facilitate the increased participation and success at degree-level study for students from participating schools.

All research work for Phase 2 followed strict ethical guidelines to ensure informed consent and avoidance of harm. All aspects of the data collection approach and processes used were reviewed and approved by the University of Auckland's Human Ethics Committee. Proper procedures were followed to gain participant consent for collection of data, and ensure the protection of privacy for individuals and confidentiality of participants and schools.

### The Starpath Approach

From its inception, Starpath was designed as a partnership-focused research and development project with participating schools. The aim was to be a key learning partner in the school improvement process. It was thought that this approach was best suited to the study of schools as complex organisations and that inschool interventions should be negotiated with school principals and other school-community members.

The professional learning and development (PLD) approach was underpinned by key values, which included:

• A commitment to improving student achievement by effecting change within current teacher and school leader practices and school systems;

 A rigorous approach to data collection and analysis leading to a deeper understanding of the processes involved in the improvement process;

• A collaborative approach in which teachers, school leaders and researchers played an active part in the research and development process;

• Regular and timely feedback in ways that facilitated ongoing evaluation, refinement, and improvement in practices; and

• The development of theory to inform others in similar situations wanting to change their current situation or practice.

Working in partnership with schools enabled Starpath to accommodate school needs and make adjustments to the research and development work in response to contextual factors and capacities within each school setting and within the Starpath team. However, this has also meant that elements of the original focus were adapted and changed. For example, although the focus in Phase 1 was solely on low decile schools, Phase 2 accepted schools with higher decile rankings (for example decile 4 -8), as they were located within existing school clusters for PLD purposes. Schools also made decisions about which participants Starpath had access to in terms of academic counselling observations and participant interviews. Finally, undertaking research and development within participating schools meant that Starpath needed to be responsive to turnover in school personnel and changes to schools' timetabling demands. At times schools were struggling to accommodate Starpath and engage in intervention activities, as they were involved in other PLD initiatives at the same time.

### Participating Schools

Phase 2 Starpath recruited an additional 34 secondary schools. They joined the project in three stages although for project purposes they were grouped into Group A (16 schools) and Group B (18 schools).

#### Group A schools

Sixteen schools were approached in the middle of 2011 and these formed the Group A schools. The majority of Group A schools were located in south and east Auckland. They were large urban Pasifika schools serving low socio-economic communities. The exceptions included a large mid-decile school and a low decile school serving a high Māori population. Half of the south Auckland schools were part of a low decile cluster known as AIMHI. A second cohort of Group A schools came from the Kaipara/Whangarei district. These schools had much smaller student numbers than their Auckland counterparts with higher Māori populations and served communities with higher socio-economic status.

#### Group B schools

At the start of 2012 all of the invited secondary schools in West Auckland agreed to join the project. These eight schools formed the initial Group B cluster. Starpath was keen to take on this group as a cluster as they had a natural affiliation with one of the Phase 1 schools and had been cooperating together for some time in an association known as Achieving @ Waitakere. By taking on this cluster the project recruited a high decile school and two single sex faith-based schools. The majority of these schools were large, with high numbers of Māori and Pasifika students.

By the middle of 2012 the remaining Group B schools had been recruited. Five schools formed a large group in the Far North, clustered around another Phase 1 school. This Far North group consisted of small rural schools with high Māori populations. This group included two area schools, with student populations from Year 1 to 13 and one school where students enter at Year 7. The rest of Group B in Northland included three rural schools south of Whangarei.

The final 2 schools in Group B were low decile Auckland schools keen to join the project, but not included in the Group A intake.

#### Phase 1 schools

Although the five Phase 1 schools were not included in the introductory programme for Phase 2 and did not participate in its baseline survey, Starpath continued to work with them and included them in training and analysis. They were invited to participate in the new work developed by the Woolf Fisher Research Centre and the University of Auckland Centre for Educational Leadership. Interviews were conducted in 2015 with 21 Phase 1 school principals, senior and middle leaders, both past and present. Data from these interviews are also included in this report, as they highlight important issues related to the overall impact and sustainability of Starpath-led initiatives over time.

#### Student and School Demographics

The following data and figures provide an aggregated snapshot of the ethnic make-up of the student population within Starpath's 39 partner schools, as well as information on their size, decile and location.

Of the total student population across the 39 schools, Māori and Pasifika students make up the majority:

- 29% of all students are Māori and the same percentage is Pasifika.
- 27% of students identify as Pākehā/NZ European and 12 % as Asian.
- 3% of students are identified as 'Other'.
- · Starpath schools include 43% of all Pasifika high school students nationally.



#### Figure 1. Range of School Sizes

There is a range of school sizes within the Starpath programme:

- 46% of schools are large with more than 1000 students.
- 28% of schools could be considered in the middle range; with between 500 1000 students.
- 26% are small with less than 500 students.



#### Figure 2. Range of School Deciles

There is also a range of school deciles:

- 46% of schools are between decile 3-5.
- 41% of schools are decile 1 2.
- 13% are over decile 5.



#### Figure 3. Range of School Locations.

The majority of Starpath schools are urban:

- · 62% of Starpath schools are identified as located in an urban area.
- 28% are identified as located in rural areas or small towns.
- · The rest are identified as regional.

# Phase 2 Professional Learning and Development

The following section describes the professional development and learning (PLD) intervention for each of the three initiatives (DUACTS, Literacy and Leadership).

### Data Utilisation, Academic Counselling and Target Setting

As described earlier, the DUACTS programme was developed from Starpath Phase 1. The conceptual framework was based upon a practical commitment to working with partnership schools and their staff. While the overall goals of Starpath were to improve educational achievement and outcomes for students, the main aim of the work in schools was to help implement the DUACTS programme and to work with schools in evaluating its effectiveness in improving students' educational outcomes.

Starpath in schools included on-site direct assistance for teachers and school leaders, direct observations of data utilisation, academic counselling and target setting and other PLD support through workshops. Some of the PLD work was generic and was presented to all schools in the project but other PLD was responsive to the needs expressed by individual schools. Following the introductory presentation made by Starpath staff visiting each school, the DUACTS professional development programme had two major strands. One was focused on each school's capacity to collect and use student achievement data for improvement purposes and the other was on improving academic conversations between students, teachers and whānau/parents/caregivers. Baseline data were collected and improvements tracked in student achievement and school practice in a series of formative, individualised reports which were fed back to Phase 2 schools.

#### Data Utilisation

Without a capacity for longitudinal tracking, it is impossible to discern whether a student or group of students are on track to achieve their goals and aspirations, or to determine when a student or group of students begins to head towards failure, discover the reasons why and take effective action. A key aim of the DUACTs programme was to enable each Phase 2 school to develop and maintain an Evidential Database (EDB). It was viewed as an essential tool to enable schools to collect longitudinal data on student achievement, and use those data to improve practice and outcomes for diverse groups of students over time. However evidence collected by Starpath indicated many schools struggled to maintain their EDBs, particularly if key project personnel with data utilisation expertise left the school. Ongoing support will be required for schools to achieve this goal. A Communities of Learning (CoL) approach may allow schools to develop such a tool across Early Childhood, to Primary to Secondary, with dedicated staff who can perform this role for schools

#### Role of the Student Achievement Manager (SAM)

One of the first tasks was to train the person identified as the Student Achievement Manager or SAM. Some schools also nominated a Data Manager who supported the SAM with data storage and analysis. After locating all of the student achievement data in a school, assistance was provided to the SAM to create the EDB using Microsoft Excel, so that each school could interrogate patterns in student achievement over time. Approximately 45 to 50 people were involved in these individual training sessions.

The professional learning and development workshops, held in Auckland and Northland. introduced new skills such as merging data, target setting, manipulation and interpretation of data. Subsequent workshops concentrated on techniques for target setting and data analysis using the data visualisation tool Fathom. After the initial training there was a programme of regular school visits by Starpath staff to support the tracking of student achievement results, to provide feedback on data utilisation work being undertaken within schools and make suggestions for improvement. Individual coaching was provided to better understand and use student management systems such as KAMAR. Reports were written up for the individual SAM, school and for the DUACTS team.

In the second and third year of the project there were further workshops based on using data for discussion and planning, including the development of data teams. At times SAMs were accompanied by non-teaching staff who supported data utilisation within their school. In response to requests from schools, Starpath facilitators provided training on interpreting asTTle data and using these data to develop next steps for teaching and learning.

#### **Target Setting**

Prior to intervention, the process of target setting in schools was for each year level cohort and consisted of extrapolation from previous years' results, irrespective of the ability of that cohort.

With the introduction of the EDB and longitudinal data, it was possible to use the achievement of previous cohorts in NCEA, and the achievement of the target cohort to date, to estimate a target number of credits for each individual student in a cohort and therefore to determine whether each student would reach the credit threshold for the award of NCEA. By aggregating the outcome for each student, a cohort target could then be set. Part of the challenge of this work was in ensuring high expectations for students so that targets encouraged teachers to push and support students to do their personal best.

An innovative approach, using a modified form of data envelopment analysis (DEA), was introduced and the SAMs provided with training to implement the process early in the school year. However, this process proved to be too time-consuming for schools at a busy time of the school year (at a minimum, half a day per cohort), and the SAMs abandoned the process in favour of the simpler extrapolation method they were more familiar with. For individual students, the *de facto* target reverted to the award of NCEA Level 1, 2 or 3 according to the year level of the student.

#### Academic Counselling and Parent-Student-Teacher Conferences

Schools were asked to nominate one or two teachers who would take responsibility for coordinating academic provided with a counselling and the newly introduced three-way parent-student-teacher (PST) conferences. The first workshops covered the key ideas and shared strategies for introducing the practices in schools. Starpath also provided a number of resources to support the establishing of these practices. Staff at two Phase 1 schools agreed to share their practices through the production of a DVD. Schools were copy to use in their own PLD programmes. Phase 1 schools were also prepared to share resources they had developed for AC and PST. These were organised into a private website through which schools were able to access templates. In the second and third year of implementation, workshops were held that enabled the AC and PST coordinators to meet and reflect on the introduction of the two and three-way conversations. Ideas were shared, including the successes and challenges of implementation. Again, practitioners were invited to share their strategies.

The basic message of the academic counselling programme was that every student should have a significant adult who had responsibility for overseeing his or her academic progress. Using achievement data, the teachers were asked to help students formulate learning goals and work with them to plan their pathway to Level 2 and 3 qualifications. Different schools arranged different times and locations for these conversations depending on their own timetable structures.

All Starpath schools adopted some form of academic counselling, although sometimes using a different name. Academic counselling took place in the following ways:

• In 22 schools the whānau (form) teacher had responsibility for academic counselling although in five of these schools the whānau teacher had some extra help from senior leaders or deans. In these schools the conversations were between a teacher and an individual student; • In six schools the responsibility for academic counselling was with the Dean and in these cases many of the sessions, particularly for junior students, were conducted as small group counselling although individual counselling did take place, particularly for senior students. One school changed their model during the project and moved towards whānau teachers taking on the role;

• In seven schools all teachers had a group of students to work with. In this way schools reduced the number of students any one teacher had to work with; In one school the senior leaders worked with Year 9 and 10 students only;

 In two schools academic counselling was implemented for a small number of 'at risk' students; and

 $\cdot$  In one school counselling took the form of whole senior school assemblies.

For most of the schools, academic counselling sessions were conducted throughout the year with individual students having three to five conversations in that time. In a couple of schools the time for academic counselling was concentrated into two to three week blocks and these would occur two or three times per year, often a few weeks before the PST conference.

In an ideal situation the significant adult who provided the academic counselling was the teacher who met with the student and their family for an extended conversation about the student's progress and learning plan. It was expected that schools would replace the traditional subject teacher meetings with a 20 to 30 minute conversation where families and students discussed progress with the academic counsellor. Starpath intended that the conversation would be based on evidence and be used to promote the student's role in discussing their own learning.

Thirty-six schools introduced the enhanced PST conferences, although in one school they were trialled in Year 11 only. Two schools made the deliberate decision not to hold PSTs and for another school the introduction was delayed several times and did not happen within the time frame of this report. All schools that held Starpath-style PSTs asked the whanau teacher to be the teacher in the three-way conversation. This meant that for nine schools the teacher involved in the PST was not the teacher in the AC relationship with the student. Twenty-one schools in the project held the threeway PST conference once a year. For 15 schools PSTs were held more than once a year. In many of these cases the first meeting was used to discuss student goals for the year with the second used as a review meeting. At least two schools continued to hold the traditional subject teacher/parent interviews as well as the new PST conference.

Towards the end of the project the emphasis of the PLD programme was on helping schools to sustain and embed the AC and PST practices. The Starpath facilitators responded to schools asking for reflective workshops and the training of new teachers. Some schools were also interested in how they could review and improve their practice.

In 2016, a toolkit containing Starpath process manuals and templates was placed on an open website at www.starpathtoolkit.auckland.ac.nz.

#### The Literacy Professional Learning and Development Programme

The Woolf Fisher Research Centre was contracted by Starpath in 2011 to lead the research and development strand in literacy. The literacy PLD programme was delivered via a series of workshops aimed at school and subject leaders. It had two strands. The first strand had a cross-curricular literacy focus and consisted of four half-day workshops held over one year. The content included analyses of teaching and student achievement data collected from the schools and evidence-based approaches for developing students' reading and writing. Topics included the importance of repeated opportunities to read appropriately challenging text, using quantitative and qualitative tools for assessing text difficulty, principles and activities for developing students' knowledge of vocabulary, text structure, language features and writing.

The second strand was subject specific and consisted of separate one-day workshops for teachers of English, mathematics and science.

Fourteen of the schools began the literacy PLD in December 2012 (Group A) and another 20 joined in December 2013 (Group B). Across both years' workshop series, a total of 240 different leaders from 35 schools attended one or more workshop days. In total over the two series there were 565 attendances. Twenty schools sent at least one leader to each of the four workshops and six schools had three or more leaders in attendance. For each group, the PLD was preceded by classroom observations, which were used to create profiles of literacy teaching across three core subject areas; English, mathematics and science.

Profiles of student literacy achievement in these subject areas at Levels 1-3 were also developed from analyses of a selection of achievement standards with high literacy demands, which were called Subject Literacy Achievement Standards (SLASs). These data informed the design of the PLD and were one of the principal measures of its effectiveness.

#### The Leadership Professional Learning and Development Programme

The University of Auckland Centre for Educational Leadership (UACEL) joined the Starpath Project in 2011 to lead the research and development strand in leadership. The approach consisted of a workshop series delivered over 10 months in tandem with the literacy professional development and learning delivered by the Woolf Fisher Research Centre. The workshops consisted of four half day sessions on: issues facing cohesive school improvement efforts; an introduction to the principles of Open-tolearning<sup>™</sup> Conversations (OTL<sup>™</sup>); effective problem solving practice; and effective school improvement planning, including goal focus.

School leader knowledge of goals, and shared understandings of problems and their possible solutions, were seen as indicators for school cohesiveness. Leadership involves creating the conditions for improvement by persistently reducing and removing barriers to improved teaching and learning. This requires leaders to engage with the views of others to better understand such barriers, to learn what the conditions for improvement are, and then to establish these by challenging and changing incompatible routines and practices (Robinson, 2011).

A survey, conducted at the outset with leaders from each of the schools, informed the work throughout the workshops. Heads of English, mathematics and science (and other departmental heads if they wished to participate), principals and senior leaders were invited to attend. Across the workshop series a total of 240 different leaders from 35 schools attended one or more days. There were 565 attendances at either or both literacy or leadership sessions. Schools had been encouraged to send the same team of leaders to each of the four sessions; however this did not always occur. The average number of days attended was 2.4 days per leader.

The survey aimed to measure leaders' knowledge of their school's academic goals, their perceptions of the seriousness of certain barriers to raising student achievement and of their current effectiveness in addressing those. Middle leaders were asked to rate the seriousness of each of 13 barriers to raising student achievement. Senior leaders were asked to predict middle leader (average) ratings, and both teams of leaders were asked to rate themselves and others for their effectiveness in reducing each of those barriers. In order to identify where leadership had been more effective, both knowledge of the school's goals and alignment of ratings, including associated comments, were needed.

The survey was repeated after the workshop series had been completed and leaders were then asked an additional question about their perceptions of improvements over the period of the leadership workshops. In addition to this survey, at both time points, each school's latest annual plan was analysed to provide a score for leaders' goal knowledge. This information was then fed back to school leaders, with a particular focus on improving the quality of their action plans.

# Phase Two Project Outcomes

The following section describes the impact of Phase 2, in terms of student achievement in NCEA, entry into degree-level sutdy and changes to teacher and school leader practice associated with the three Starpath led initiatives.

### Student Achievement Results in NCEA and UE

The goals of the project were to improve student achievement at each level of NCEA and UE in each school year-on-year, and to move schools that did not reach national pass rates closer to these rates. Generally students in Starpath schools made steady progress across NCEA Levels 1 to 3 over time with the exception of a dip at Level 2 in 2010, possibly related to the introduction of the Ministry of Education's alignment project.

The trends for University Entrance have not been so positive. Pass rates for UE had improved but declined in 2014 when changes were made in the UE requirements. In view of Starpath's aim to enable more students from lower decile schools to enter degree-level study, this was disappointing.

Māori and Pasifika students generally show a similar achievement pattern of improving year-on-year and gradually closing the gap with national pass rates. The progress for these students is more marked at NCEA Levels 2 and 3.

Most Starpath schools made considerable gains in the percentage of students passing at each level of NCEA after the intervention compared with the percentage pass rates prior to the intervention. and most schools' gains were larger than the national gains for the same period. This pattern across schools is displayed visually in Figure 4, where the vertical blue bars indicate the increase in percentage passed after the intervention for each school, and the horizontal dark blue line indicates the national increase in percentage passed for the same period of time (which varies across schools, as schools joined Starpath in different years). For example, the figure shows that school 1255 had just over 30 % more students passing Level 1 after the intervention, whereas the national increase in pass rates for the same period was around 7 %. However, it is important to note that most schools nationally were making year-on-year increases over the period, and more work needs to be done to understand the factors that lie behind these increases

Overall, the results show some striking improvements and a few schools that have performed consistently well. However the patterns of student achievement across Phase 2 schools show considerable variability. This variability can be seen across NCEA levels at the same school, between pass rates year-on-year at the same school, between similar schools, between low and high decile schools, between ethnic groups at the same and different schools, and between boys and girls at the same and different schools.



Figure 4. Average shift across pre and post-intervention years for all 39 Starpath schools by level of NCEA.

### Entry into Degree-level Study

One of the primary aims of the Starpath Project was to remove barriers to tertiary participation and retention, specifically in degree-level study, with a focus on students who were Māori or Pasifika. or from low income communities. To achieve this, Starpath looked at progression of students from Starpath schools into degree-level study. Data pertaining to enrolment in tertiary study for students from Starpath schools were obtained from the Ministry of Education. This database included 99,118 individual students whose National Student Number had appeared in the evidential database of one or more Starpath schools for the period 2004 to 2014. Results showed that in their first year of tertiary study, the participation rate of students who had attended any of the 39 Starpath schools in degree-level study was 19.6%. The retention rate

was 86.9 % in the second year of degree-level study.

The participation figure is lower than the national participation rate, but the retention data compares very favourably with those reported nationally (national retention in 2010 was 77%). In Starpath schools, females participated in degree-level study at one-and-a-half times the rate of males. Approximately 10% of Māori and Pasifika students undertook degree-level study, while between 20% and 30% of their NZ European and Asian peers did so. The progression to degree-level study of students from each of the main ethnic groups was parallel to their success rate for university entrance. Another major finding was that students who do not remain in degree-level study are more likely to drop out of all forms of tertiary study, irrespective of their ethnic identity.

### Findings from the DUACTS Programme

#### Improvements in Whānau/Parent/Caregiver Attendance

School records of whānau/parent/caregiver attendances at PST conferences during 2007 to 2014 were available from 34 of the 39 Starpath schools.

Analysis of school-reported data indicated significant improvements in whānau/parent/ caregiver attendance over time (Figure 5). In 2014, 30 Phase 2 schools provided PST attendance data and the median PST attendance percentage was 71.5% which is a substantial improvement when compared to the reported traditional parents' evening attendance of 23 % in 2010.

#### Challenges in Maintaining the EDB

Thirty-seven schools initially established an EDB. There were two schools where this did not occur: one was a remote school that had very few students where changes in achievement fluctuated markedly; and the other was a school with a unique, comprehensive database that completely fulfilled its needs. For all other schools, the pressing need was for comprehensive data for currently enrolled students. School visits by Starpath facilitators in 2014 and 2015 indicated mixed results in relation to the quality and maintenance of each school's EDB over time. Twenty-one schools maintained an EDB throughout the project, whilst the other 16 schools struggled to maintain theirs. There were a number of issues which emerged from interviews with school leaders and teachers that indicated schools found it very challenging to establish and maintain an EDB over time

## Participant Interviews and Observations

Interviews and direct observations were carried out throughout Phase 2 to help determine the effectiveness of implementation and impact of DUACTS across participating schools. All schools were invited to participate in these processes. Just under a thousand participants (teachers, school leaders and students) were involved in a total of 249 interviews and focus groups. In general, participants welcomed the opportunity to provide feedback on their experiences within the Starpath programme and to comment on aspects of school-community life which they believed impacted on student learning and achievement. This was particularly so for many Māori and Pasifika students, as they felt schools needed to pay more attention to their perspectives and experiences.

On-site observations of academic counselling and PST conferences were conducted by Starpath researchers. A total of 60 academic counselling sessions were observed across 13 schools. Eight of these schools were Group A and 5 were Group B. Sessions observed involved Year 11, Year 12 and



Figure 5. Changes to whānau/parent/caregiver attendance at PST conferences at 30 schools, at around 2010 ('Traditional') and in 2014.

Year 13 students. Sixty-five teachers attended, with five sessions involving more than one teacher. In order to assist schools in the implementation process, observations of PST conferences were also conducted. A total of 114 observations on PST conferences were conducted across 29 schools Fifteen of these schools were from Group A and 14 were from Group B. Slightly more male students participated (61) in these conferences than female (53). The majority of student participants were recorded as NZ European (40) followed by Pasifika (36) and Māori (26). Asian and Other made up the 12 remaining observations with 8 and 4 respectively. Fifty-three students were identified as Year 11, 34 were identified as Year 12 students and 27 were Year 13. In total 138 parents/caregivers attended these PST sessions. The majority of the parents/caregivers that attended were female (75). This was nearly double the number of male participants who attended (38). There were also 25 other caregivers who attended these sessions, including grandparents, aunts and uncles and siblings. In six observations, there were no parents or caregivers in attendance.

#### Key Findings from Participant Interviews

It was clear from Phase 2 participant interviews that many teachers and school leaders valued Starpath and aspects of the DUACTS programme, and viewed the work as beneficial to school improvement. For example, 85% of teacher and school leader interview transcripts included positive comments about Starpath and its impact within schools. Fifty-six percent of these comments were related to perceptions on the impacts of the programme on student achievement and outcomes within schools. Many believed that the implementation of Starpath had made "a measurable difference", as teachers and school leaders spoke of increased knowledge and confidence of data utilisation and its use for school improvement purposes.

Specific themes related to positive changes included:

 An increased focus on students, their goals and aspirations and their achievements across the school community;

• Making student achievement data more visible to everyone (school leaders, teachers, students and parents/caregivers);

 More effective use of achievement data and increased tracking and monitoring of individual students and groups of students;

 More effective use of achievement data for academic counselling and parent-teacher-student conferencing purposes; and

• Greater alignment of in-school activities to support student aspirations and learning.

Participants also believed that the implementation of academic counselling and PST conferences had resulted in beneficial changes to homeschool relationships. Positive themes that emerged from the analysis included:

• Increased collaboration with others (teachers, parent/caregivers, school leaders) to increase student achievement and provide more effective support for student progress;

• Improved information flow about student progress amongst teachers, school leaders and between teachers and families;

• Teachers and parents/caregivers developing a shared language about students and their academic work;

• Honest, open, data-informed conversations across the school community about student achievement; and

• New roles and responsibilities for teachers and school leaders as academic counsellors, including becoming a significant adult in the academic lives of students.

The format of PST meetings was seen as a marked change from traditional report evenings or 'speed dating' events. During interviews some participants described different ways that their school had experimented with engaging whānau/ parents/caregivers in these events. These included advertising in local newspapers, making contact with local employers to inform them of the importance of PSTs so staff could have time to attend, contacting parents/caregivers electronically through e-mails and text messaging as well as staff undertaking home visits to families unable to make meetings at school. Other approaches included PST meetings held on local marae, utilising school vans and local transport to pick up families without cars, providing food and supervised entertainment for younger family members and using older students and teachers as communicators for families whose first language was not English.

Major themes included improvements in student motivation and increased perceptions of support for student academic progress within school communities. Students reported that:

 Goal setting and academic counselling had positively affected motivation and performance for themselves and for their peers;

• Effective academic counsellors assisted students' current performance and/or work futures/ aspirations;

• They had a wider and more connected network to support their academic work; and

• They were better informed and better prepared for the academic journey and they considered that this would lead to advanced education and/or employment.

Some students spoke of establishing informal peer support groups and sharing their results on Facebook. Peer support was considered important, as friends could encourage and/or challenge individuals to do their personal best. Healthy competition amongst peers was considered important and a key motivator for a few students.

A common response was that relationships between students and teachers had improved, particularly

between students and their academic counsellors. Teachers were viewed as more responsive to students' calls for help outside of allocated, regular consulting hours. Communication betweer students and teachers was more open and databased and students were generally happy with teachers' knowledge of the NCEA system and its intricacies. Students believed their whānau/ parents/caregivers were more involved in the monitoring of their academic achievement than ir the past. Other positive impacts included student perceptions of improved school climate, a sharec focus on student goals and aspirations as well as celebrating students' academic achievements. Al of these changes were seen to positively impact on student motivation and engendered a school culture of academic success.

Whilst there were many positive perceptions of change associated with DUACTS, analysis of interviews also highlighted a lack of progress and specific challenges. Much of this related to the integration of DUACTS into existing school systems and cultures. Participants reported that while the programme was valued and much needed, it could be challenging to integrate as it required indepth knowledge of a range of components and how these connected to improve achievement for culturally diverse students. For example, it required an understanding of effective data utilisation for improvement purposes, knowledge of student management systems, understanding of effective academic counselling, NCEA requirements and pre-requisites for entry into degree-level study, as well as an understanding of how the separate components worked together to produce results. A shared understanding was difficult to achieve across schools as individuals (such as SAMs or school leaders with key responsibilities) could be involved in some aspects of the DUACTS professional learning and development, but not others. There was also a feeling amongst some participants that this knowledge was not shared with other staff in systematic ways. A lack of succession planning



made it very difficult if key people left the school. Some participants felt that the use, analysis and interpretation of data were inadequately resourced in terms of staff time and ongoing training was needed. Participants also expressed frustration with inadequate student management systems and school server systems.

In general, and not surprisingly, leaders' concerns tended to be focused on the structural challenges to successful implementation of the DUACTS programme, while teachers were more focused on practical issues relating to the work and the students.

Ongoing challenges identified by both teachers and school leaders included:

- Teacher workload and lack of buy-in.
- Inadequate resourcing.
- Time available to do the work.
- Lack of training or preparation.
- Timing of the academic counselling and parentstudent-teacher sessions.
- Attitudes of other teachers
- Mixed results for different groups of students.
- Multiple, competing initiatives.

Teacher workload and lack of buy-in was the most cited challenge. These teachers and leaders primarily discussed the implications of implementing DUACTS in addition to a standard teaching load. Others felt that they had not been given enough information or choice about their participation. Participants commented on the time needed to prepare adequately for academic counselling and parentstudent-teacher conferences; such as forming relationships, developing an understanding of student goals and aspirations, co-constructing goals and knowing how to use data to inform decisionmaking. Some teachers reported feeling that they had received insufficient training for academic counselling. Related to this was a sense that there weren't always clear systems in place for consistent implementation throughout the school. A few participants were concerned about the timing of the parent-student-teacher conferences in terms of the yearly plan, whereas some teachers were concerned that inadequate notice had been given to parents/ whānau which negatively impacted PSTs. Others felt that a lack of data input into SMS from other teachers or school leaders presented significant challenges, which impacted on the effectiveness of two and three-way academic counselling sessions. Teachers' abdication of responsibility meant that other teachers had to pick up the extra workload.

Participants were also concerned about other teachers' problematic attitudes, and low teacher expectations of students. Concerns were expressed about mixed results or a lack of improvement in the achievement of different groups of students, and particularly for groups of Māori and Pasifika students. Some students were identified as 'at risk kids'. Others were viewed as less 'responsive', 'motivated', 'engaged' and/or less 'resilient' to failure than others. Some teachers and school leaders were worried that more needed to be done to motivate all students to achieve their personal best. Some found

students' attitudes, current learning levels, and home situations to be a significant barrier to raising achievement whilst others were also concerned about parent and caregiver attitudes. Transience was also identified as an issue for some students. Finally, there were concerns expressed about multiple, competing initiatives which meant that teachers and school leaders could not concentrate on improvement efforts.

Students also expressed concerns, particularly related to academic counselling and/or PST conferences, but also about other aspects of school life which they believed impacted on their achievement. Students argued that the effectiveness



and relevance of academic counselling varied, and was dependent upon multiple factors including: the expectations, expertise and motivation of teachers; how decisions in academic counselling sessions were reached; parents/caregivers lacking knowledge of NCEA and how to support student progress at home; individual student's academic abilities and whether academic counselling was really needed; and students' lack of confidence in goal setting and inadequate content within academic coaching sessions. Students also believed they and/or others were faced with under-motivated, dispassionate teachers.

Māori and Pasifika students were most likely to talk about low teacher and community expectations and about the damaging impacts of negative stereotypes associated with being seen as 'low achievers'. Some believed that teachers had counselled them and/ or their peers into lower value courses, and that a form of academic differentiation or profiling was emerging based on inadequate evidence.

Some students shared their fears about the RAG (Red. Amber, Green) traffic light system; which was used within some schools. A 'Red' was used to identify students who failed assessments, 'Amber' for those students at risk of failing and 'Green' for those who had passed and/or were on track. According to some students this information was made public, identifying students in the 'Red', 'Amber' and 'Green' categories. One group believed that 'red light' students were de-prioritised in favour of those who were doing well. These students expressed concern that red traffic lights further discouraged themselves and other students who found school difficult and/or struggled in their learning. Students were concerned that there was a lack of formative feedback provided to struggling students on how to improve their learning and achievement within and across different subjects. Students perceived that peers who were 'in the red zone' were often mocked or derided by other students for their poor performance because their results were made public.

#### Key Findings from Observations

Starpath observers worked as a team and developed a consensus around the observations of academic counselling (AC). This included: what researchers expected to see following specific PLD; what was or was not observed and needed to be noted; and what constituted 'high' or 'low' quality interactions observed on four dimensions. These dimensions were: a focus on achievement: databased conversations; interactive or dialogic style; and an individualised approach. Observations were graded 1 to 4 on these dimensions: a grading of 4 was highest and 1 was lowest for each category. Initial observations were conducted in pairs so that agreement could be developed of the same observations. In the vast majority of cases at least two team members carried out the observations on a particular day and verbal debriefing (including clarification of what was observed) was a routine part of the process. It should be noted that the scale scores were treated as indicative and not definitive (and these were not reported back to schools).

The focus was on qualitative observations and qualitative evaluations of AC.

Analysis of academic counselling sessions revealed variability of length of meeting, goal setting discussions and interactions between participants One conference was six minutes in length and another lasted one hour and 35 minutes; however the majority lasted between 20 to 30 minutes. There were individual sessions, small group and whole class academic conferences. Of the 60 counselling sessions observed, 17 were the first to be held: five were noted as 'First in the year'; and 29 were a second or subsequent session. Nine of the observations did not have this information recorded. Goal setting types were also recorded. Observers identified the types of goals discussed and set, as either short term, medium or long term goals. Twenty-six of the 60 academic counselling sessions were recorded with two goal types and 19 had all three goals being identified and discussed. Ten observations recorded one goal being discussed; whilst five observations indicated that no goals were observed or discussed during the academic counselling sessions. Individualised interactions were rated highest while data-based interactions were rated the lowest on average. Six of the schools recorded averages higher in three or more categories. One school had all four categories in the PST and AC observational data above the averages in both analyses.

Analysis of PST sessions followed a similar process Results also indicated variability in the types of meetings observed, interactions between participants and goal setting practices within and across schools. Fifty-six of the 114 observations were recorded as a 'First ever' PST conference, 43 observations were recorded as 'First in the year' 'Subsequent' accounted for 11 conferences, and four of the observations did not contain this information. Sixty-five of the 114 PST observations were recorded as being a 'Three-Way' conversation involving teacher, parent/caregiver and student. Twenty-five of the 114 PST conferences were recorded as 'teacherstudent' conversation, while 17 were observed as a 'teacher-parent' conversation. Goal setting was another behaviour that was recorded. Forty-nine of the 114 PST observations were recorded as setting one goal, and 39 of the PST conferences had two goals recorded. Only 14 of the 114 PST observations observed had three goals that were discussed and set. Those that were identified as a 'subsequent' conference had the highest proportion of goals set, while 'First ever' PST conferences had the lowest. Seventeen of the 114 PST conversations observed no goal setting. Ninety of the 114 PST conferences were observed to include 'Engaging' conversations, followed by 14 observations observed as being 'Perfunctory'. Seven of the 114 observations were recorded as being 'Uneasy and Tense'.

PST conferences were also given a grade from 1 to 4 on the following dimensions: Three-Way Talk, Data-Based, Individualised, and Achievement-Focused. A grading of 4 was the highest score with 1 being the lowest. Individualised interactions scored the highest on average, while Three-Way talk was the lowest on average. Twelve of the 29 schools recorded averages higher in 3 or more categories.

### Findings from the Literacy Programme

#### Shifts in Features of the Literacy Instruction

Observations of literacy practices in Year 12 English, mathematics and science classrooms were carried out at two time points, once before the literacy PLD, and once after the literacy PLD. Schools and teachers could opt in to this aspect of the research, and only schools and teachers that provided written consent were observed. The data reported here only contain schools that were observed both before and after the literacy PLD. The number of lessons observed across the two time points was 252 (n = 90)English lessons, n = 88 mathematics lessons, and n = 74 science lessons). Observations took place in coding cycles, intermittently focusing on the lesson for three minutes and coding observations for another three minutes, resulting in multiple observational blocks. Each block was coded for the presence or absence of the literacy aspect judged by observing teaching practice.

Analyses of pre-post PLD observation data showed potentially important shifts in some aspects of literacy instruction but not all. The percentage of blocks, in which students were provided with texts to read increased by 15% in English, 29% in mathematics and 14% in science. The average length of texts used in class also increased and there was a decrease in the proportion of texts that were teacher designed (such as teacher-written notes and hand-outs), meaning students were observed to have relatively more opportunities to read published print texts. However, there was no change in rates of extended discussion that remained very low across all three subjects, and there was no overall increase in the average rates of explicit literacy instruction, or the amount of focus on critical literacy instruction.

A lack of improvement in critical literacy instruction is particularly problematic if the key aim of the Starpath programme is to enable more students to gain UE and enter and succeed within degree-level study. It is important to note that the second round of observation data was collected before the final workshop in the Year 11-13 programme had been delivered and prior to follow-up support for literacy leaders commencing in 2015. For this reason it is possible that the observations may underestimate shifts in literacy teaching that may have occurred in the longer term.

#### Shifts in Achievement in Subject Literacy Achievement Standards (SLASs)

Neither the introduction of DUACTS in the first year nor the Literacy and Leadership PLD in Year 1 were associated with sustained improvement in pass rates, relative to national pass rates, in the aggregated SLASs. Despite small fluctuations from year to year the trend for all subjects remained fairly consistent with Starpath schools on average having higher than national pass rates in English SLASs and lower than national pass rates in mathematics and science SLASs.

There was considerable variability in patterns of achievement after the literacy and leadership PLD with about half the schools (16) making larger gains in SLAS pass rates than schools nationally and about half (18) having smaller gains in pass rates than schools nationally. Interestingly, seven of the 10 schools with the greatest increase in SLAS pass rates had decreased participation rates over the same time period meaning that more selective enrolment of students in those standards may have contributed to the increase in pass rates. Four schools had marked increases in both pass rates and participation rates and the literacy team is currently reviewing these data to see what factors may have contributed to these positive patterns.

#### Exploring Relationships between Shifts in Teaching and Shifts in Achievement

Statistical modelling was conducted to identify factors that affected the SLAS outcomes. The factor representing the quality of literacy teaching was termed Literacy Instruction Coverage. This was a measure of the different aspects of literacy instruction covered averaged across the blocks of classroom teaching. Literacy Instruction Coverage was significantly positively related to pass rates in mathematic standards, and marginally significantly positively related to pass rates in science standards. This meant that the higher the quality of literacy instruction (before or after the intervention) the higher the pass rates for SLASs in these content areas. Even more importantly, increases in Literacy Instruction Coverage after the intervention positively predicted changes in pass rates across SLAS subjects. The estimate from the statistical modelling is that an average increase of one additional aspect of literacy instruction after the intervention, would result in increased odds of passing English, mathematics, and science SLAS standards. This is a very important finding as it provides strong empirical support for the claim that developing literacy instruction is a potentially powerful way of improving student achievement in subject-areas. However, it is important to note that the intervention did not produce uniform shifts in literacy teaching practices and this did not translate into generally higher pass rates for students in high literacy standards.

### Findings from the Leadership Programme

#### Shifts in School Leaders' Goal Knowledge and Annual Plan Quality

Analysis of School Leader surveys indicated variability of impact within leadership teams and across schools. Average team goal accuracy scores over the two time points indicated that leaders from senior management teams were able to recall their school goals with about 55% accuracy. Middle leadership teams on average recalled goals with about 40% accuracy. These overall results did not change significantly during the intervention period; however leadership teams in a few schools did show significant improvement in their goal knowledge scores. Goal recollection was highly variable across schools. There were some leadership teams where all members could recall all their goals, and other teams where no members could recall (with sufficient precision for answers to be scored) any actual school goals at all.

Goals ought to provide a tight focus for improvement

in an organisation. It is important they are clear, well derived from (and focused on) agreed needs, elicit motivation and are memorable. A major finding from analysis of school plans was that there were too many goals and targets related to student retention, engagement and achievement. School leaders struggled to recall their school goals; and indeed it was also challenging for the leadership facilitation team to identify many current priorities from school documentation. While, on average, the analysis team found four academic goals, most schools had large numbers of associated targets (on average, nine), as well as a number of separate interventions. These were often additional programmes in a school that focused on improving particular areas, for instance, behaviour. Each programme was then expected to generate additional goals or targets. Furthermore there were numerous goals outside the 'academic' set, for example to do with teacher development, property, or finance. The basic mechanics of annual planning, specifically goal and target setting, were well embedded. This was

particularly visible after the workshops as school plans tended to have strong alignment between the strategic section and the school's annual goals and targets. However, most schools still appeared to lack a really sharp focus on a few key problem areas. Qualitative analysis of leaders' reported goals revealed a wide range of types of responses. In schools where leaders showed high goal accuracy, there were few other ideas listed as goals; and even incorrectly recalled goals tended to be similar to the actual school goals. In leadership teams with low goal accuracy this commonality of theme was markedly absent; teams listed 'goals' of many types (such as various implementation strategies or wideranging targets in different areas of achievement), which often bore little relationship to each other. These findings were also reinforced by the improvement ratings and associated comments, which consistently mentioned improved clarity, simplicity, and better focus on fewer goals. In a few schools, planning seemed to reflect deep analysis and a sharp focus. In these schools, goals were succinct and few, and leaders usually obtained the highest goal knowledge scores. In other words, they knew where their school was headed.

# Shifts in Understanding of Problems with Raising Student Achievement

Of the barriers commonly reported by Starpath schools (Table 1) four of the five most serious (as rated by middle leaders) were all student-related. Three of these barriers were rated as highly serious ( $\geq$ 4.5) across both time points: D (low literacy levels), K (absenteeism), and G (motivation); barriers A (preparedness to learn) and M (teacher time) were both also rated highly at first, but as slightly less serious in Time 2. Together this indicated that middle leaders saw student factors, combined with pressure of time, as the main barriers to be addressed. Although there was a slight drop in seriousness for most barriers overall, nevertheless such problems remained prominent.

While middle leaders were asked to rate the seriousness of each barrier senior leaders were asked to predict the ratings of their middle leaders. These predictions of barrier seriousness by senior leaders generally improved over the period of the leadership intervention (i.e. their awareness of middle leaders' views and likely ratings on these problems seemed higher, which is an indicator of coherence). The general trend for senior leaders to under-predict, evident in Time 1, became more balanced and more accurate by Time 2 for most barriers. By comparing senior leaders' prediction accuracy for each school to others in the group, it was possible to identify and advise schools where improved coherence might be needed: through deep engagement with one anothers' perspectives, in such a way that evidence for their views, over the nature and possible solutions for such problems, could be genuinely evaluated.

Middle leaders were asked to evaluate the effectiveness of the senior leadership team (as a whole) in dealing with each barrier that they had identified as serious. These analyses revealed a wide range of perceived SLT effectiveness across barriers and between schools. Once again, this information provided a valuable framework within which guidance could be offered to leaders. Such perception data provide opportunity for productive reasoning between leaders. Although on average senior leaders were not rated as showing improved effectiveness on most barriers (as was hoped) there was a significant increase in ratings for SLT effectiveness on two barriers: timely access to student data and limited cultural responsiveness on the part of staff. Both had been a focus of the Starpath intervention and it seemed that this effort was reflected in middle leaders' ratings. Nevertheless the most serious problems faced by these schools were perceived to have shifted little. Students' literacy, absenteeism and motivation, for instance, persisted for many schools as both highly serious and minimally effectively addressed.

Finally, when asked to rate improvement across three areas of senior leadership work, middle

#### Table 1: List of Barriers

Code	Barrier
А	Students coming to school not prepared to learn
	Variability of teacher performance/ teaching effectiveness issues
С	Lack of timely access to student achievement data
D	Low literacy levels of students
E	Lack of resources/financial issues
	Limited cultural responsiveness/ knowledge on the part of staff
G	Motivation/self-belief of students
	Low teacher expectations of students
1	Poor/unacceptable behaviour of students
J	Lateness to class by students
К	High student absenteeism
L	High transience of students
М	Competing demands on teachers' time

Note. Colours indicate categories of apparent barrier locus: SLT (yellow); Students (blue); Teachers (red).

leaders (on average and across all schools) rated senior leadership teams as significantly lower for improvement in addressing undesirable variability in teaching than the senior leaders rated themselves. This was no surprise as the problem is central to effective school improvement work and is often seen by leaders as highly challenging. The significantly higher rating by senior leaders implied that they seemed to overestimate improvements of their own team's work in addressing teaching variability. Improvement ratings varied significantly however from school to school, often reflecting improvements that the Starpath leadership team had seen themselves; for example in the area of goal focus. This finding emphasised the need for leaders to better align their understanding of undesirable variability in teaching as a key barrier to raising student achievement.

## Follow-up Professional Development in Northland

By the end of the intervention, the Starpath leadership team felt that although some schools had made important changes towards establishing greater coherence, improved problem solving, and seemed to be on the path towards improved student achievement, many other schools seemed not to have engendered sufficient change in practice. To address this, the leadership team provided five professional learning and development sessions to five Starpath schools across Northland in 2015 in an attempt to help further embed some key ideas. The sessions were distributed throughout the year and delivered the five modules of the Growing Great Leaders™ (GGL™) Programme, followed up with mentoring in schools to help ensure that leaders could implement the 'inquiry, learning and action' cycle (Timperley, Kaser, & Halbert, 2014) and understand the principles and processes of improvement. This way, school leaders could independently address other problems and improve results for students in the future. The leadership

team emphasised that this inquiry cycle was a problem solving cycle and that good annual planning merely encapsulates the problem solving on paper. There was a focus on the need to motivate and engage middle leaders in the process of problem definition and on carefully, and jointly, planning a few high leverage strategies for improvement. Results from the problem solving questionnaire had shown low levels of middle leader engagement in these schools, and thus deep engagement with their perspectives, as the people immediately leading learning in the schools was emphasised. Two brief video examples from schools that have used the cycle unsuccessfully at first, but then successfully, were shown. These emphasised leaders' learning: strong goal focus and strong procedural routines to achieve the desired ends (e.g. how to keep the goal in front of staff and students all the time; how to organise meetings and use the time to work on the goals; how to have targeted professional learning and development only on the 'point of need' in the cvcle).

The Northland leaders had several attempts at articulating their key problems (goals), their key improvement strategies, and their method of measuring progress during the course of the day to clarify their thinking. It was clear that many had learnt valuable lessons from 2015 and were energised with the opportunity to analyse and discuss their approach to 2016. At the end of the session each person was asked to 'commit to an action'.



### Phase 2 Summative Evaluation

Starpath's summative evaluation activities in Phase 2 were concentrated on attempts to evaluate the effectiveness and impact of Starpath-led initiatives across the 39 partner schools. The evaluation utilised a mixed-method approach involving multiple data sources (quantitative and qualitative) and triangulation of findings (Creswell, 2009). Specific details regarding the evaluation of each of the three initiatives, including descriptions of data collection, analysis and findings are included in following sections. As indicated earlier, schools in Phase 1 were also included in this evaluation process, to determine sustainability of progress over time.

A major limitation of this evaluation has been the lack of a comprehensive summative evaluation framework, which encompassed the three initiatives and was designed and agreed to at the beginning of Phase 2. Such a framework would have enabled the project to better analyse the distinct contributions of Starpath on student achievement and school improvement efforts, as well as develop a better understanding of how the three distinct components (DUACTS, literacy and leadership) might have worked together to enable change.

#### Matched School Comparisons

The first attempt to isolate the impact of Starpath on student achievement was a matched school comparison, whereby Starpath schools were matched to a sample of similar schools that had not participated in Starpath. A stratified sample of 39 schools that together had similar characteristics to the Starpath schools was selected. The selection variables were urban area, school authority, gender of students, decile rating, school type, total roll, proportion of Māori students, and proportion of Pasifika students. There were difficulties in finding an appropriate match for Starpath schools with high numbers of Pasifika students, as Starpath schools have 43% of all Pasifika high school students nationally, and no other group of 39 schools in the country could match that figure.

In general, the matched schools outperformed, or performed at the same levels, as the Starpath schools (Figure 6).

However, the matched comparison provided unreliable conclusions. The method used could not isolate a 'Starpath effect' (or otherwise), as the schools were matched on the variables available, and there may have been other variable(s) that might have impacted on achievement. For instance, the study was unable to control for different school initiatives and interventions in the matched sample and how these might have impacted on outcomes. There were also difficulties in matching schools for proportion of Pasifika students. As the Pasifika students tend to achieve at a lower rate than their peers, there may have been bias in favour of the matched schools where there were fewer Pasifika students.

#### Hierarchical Linear Modelling

A hierarchical linear modelling analysis, using rollbased data and variables from data collected during the course of the project, was also undertaken in an attempt to isolate and evaluate the impact of Starpath. Hierarchical linear modelling techniques are widely used in educational research, as they consider the nature of school structures. In general, the analyses showed considerable variability and inconsistencies across groups in the total number of cred its attained and odds of passing across time and the three levels of NCEA and University Entrance with respect to each of the explanatory variables. In terms of overall school results:

• Many schools have made steady increases in their pass rates at Levels 1, 2, and 3 of NCEA across 2006-2014;

· There are differences between schools in

percentage pass rate gains over time;

• Students in two schools in particular have consistently been high achievers (and have therefore not made large shifts in percentage pass rates due to ceiling effects);

• Three schools have made larger gains after the intervention, compared with their own prior achievement. In one case a school made consistently greater gains after the intervention period across all levels of NCEA;

• There was no pattern of increase at University Entrance (UE).

With respect to the demographic data, the following overall patterns were statistically significant:

• Females attained more credits and had greater odds of achieving across all levels of NCEA than males, although male achievement rates were increasing at higher rates (i.e. the achievement gap between genders is closing);

• Māori students gained fewer credits and had lower odds of attaining at all levels of NCEA than non-Māori students. In addition, Māori student achievement rates were not increasing as quickly as non-Māori achievement rates, indicating that the gap is widening. This finding is particularly problematic as Māori students tended to be achieving considerably below non-Māori students;

• Pasifika students gained fewer credits and had lower odds of attaining at all levels of NCEA than non-Pasifika students, although in most cases Pasifika students had increasing achievement rates compared with non-Pasifika students (i.e. the gap is closing);

• Asian and NZ European students gained more credits and had higher odds of attaining NCEA than non-Asian and non-NZ European students. Overall, there was little change over time in the attainment rates for Asians and NZ Europeans versus non-Asian and non-NZ European students;

• Higher decile schools were higher achieving than lower deciles.

On the basis of the intervention variables that were used, there was no evidence that overall school gains were associated with specific aspects of the intervention (i.e., DUACTS, literacy or leadership) or with the intervention period at any levels of NCEA. Rather, schools appeared to have increased pass rates in a reasonably linear fashion prior to and after the intervention. Because Starpath had not collected baseline information that might robustly inform such a study, it was impossible to draw sound conclusions about the impact of the intervention overall on student achievement. There was considerable variability across NCEA levels in terms of main effects and effects over time on the intervention variables. Collapsed across time, there was no single variable that was consistently found to be associated with higher or lower achievement. Across time, the sole intervention component that was consistently associated with differences in student outcomes was observer ratings of academic counselling/parent-student-



Figure 6. Comparison of pass rates across levels for Starpath Schools (SP All) with Comparison Schools (CS All) and National (Nat All).

teacher conferencing. Schools that were rated comparatively high in academic counselling/parentstudent-teacher conferencing made greater gains than those that were rated comparatively low. It is however important to note that this conclusion is based on data from only 22 schools which were collected at only one time point for each school (and these time points differed across schools). In addition, as schools identified the academic counselling and PST conferences that Starpath observed, these observations may have been rated highly precisely because they were observations of conversations with high achieving students.

### Exploring Sustainability: Findings of the Phase 1 School Interviews

Twenty-one school and middle leaders from the five Phase 1 schools were interviewed in 2015. These included past and present Principals, SAMs and senior and middle leaders. Content analysis of interview transcripts revealed similar themes to those of school leaders and teachers in Phase 2 schools. However a key finding was that there were particular contextual influences which could enable or inhibit the sustainability of change and improvement within schools.

#### The Value of Starpath

Phase 1 participants viewed the Starpath partnership approach as very beneficial and helpful, with senior and middle leaders both highlighting the rigour of data being presented back to school teams from Starpath. This feedback was highly valued and Starpath was viewed as a 'critical friend' in the school improvement process. Participants described Starpath as 'a complete package' which enabled senior and middle leaders to focus on improving different aspects of their schools and to understand how the school worked as an integrated, social learning system for both students and teachers. However, they also acknowledged that improvement work required considerable changes in both school organisational structure and culture in order to be successful. Sustainability was perceived to be possible only if the school's senior management team actively owned and supported the process and were willing to interrogate their own practices. It was also important that school leaders and others responsible for implementation of Starpath initiatives kept their focus on students' learning and achievement needs.

Many participants believed that the implementation of Starpath had resulted in positive changes within their school and to student achievement, and these were related to the practical focus of Starpath work. School leaders welcomed the opportunities to work with their own data and use them to target improvements across areas of need. There was a shared belief that there was more focused support for students through improved data utilisation, target setting, academic counselling and PST conferences. A key change was the need to redefine the role of deans and/or other teachers (tutor/whānau) who had responsibilities for counselling a group of students about their academic trajectories. Other Starpath practices and aims (such as communicating higher expectations and encouraging students to aspire to apply for university) were also seen to positively influence current practice by increasing options for students. Effective and sustainable change included improved PST conferences and increased whānau/parent/caregiver attendance and engagement at school. Many participants talked about this. Participants felt that Starpath had introduced a more effective structure or method for engaging families through the PST model.

Although many school leaders believed the implementation of Starpath-led initiatives had resulted in positive changes to student achievement, some weren't sure if these impacts could be attributed to the programme, partly because there were many other PLD interventions occurring within schools at the same time. Finally, participants appreciated that the programme had not been applied as 'one size fits all' and that school leaders were able to implement it in ways best suited for their school context. It was considered essential that schools owned the initiative and improvement process, although the partnership approach with the University of Auckland was really valued.

#### The Challenge of Organisational Change

Although many Phase 1 participants talked about positive impacts of Starpath, there was also a view that sustaining improvement over time was much more challenging and required essential and considerable change in each school's organisational structure and school culture ('the way we do things around here').

Raising the achievement of different student groups across all year levels was

seen as a key issue. There were specific barriers to developing effective data utilisation along with high expectations of students within schools. Principals were particularly concerned about the lack of staff capacity to interrogate student achievement data and to use the data to improve classroom practice and student outcomes.

Another challenge encountered was that different types of data (quantitative and qualitative, formative and summative) were needed for different purposes and at different levels of the school, and that data were not always fit for purpose. At times Starpath was criticised for not doing enough to assist schools, and principals believed more professional learning and development opportunities were needed in the area of data utilisation to enable leaders and teachers to make informed decisions across departments and classrooms.

A few senior school leaders were particularly concerned about unintended consequences of wider government policy initiatives, such as the Better Public Service Target for 85 % of 18-year-olds to have achieved NCEA Level 2 or an equivalent qualification in 2017. These participants believed that schools were under pressure to inflate student achievement statistics. One principal acknowledged that the practice of offering 'at risk' students 'easy' or 'cheap' credit options was a contested practice within their school. Some school participants have commented that they didn't realise that the ultimate focus of Starpath was to enable more Māori and Pasifika students, and others from low decile schools, to gain entry and succeed in degree-level study.

Variability of academic counselling also concerned school principals, as some teachers were judged to be very effective in this role and others, much less so. Some teachers could be apprehensive and/or resistant to taking on new roles associated with the 'significant adult' for groups of students. Senior school leaders perceived that some teachers saw their role as subject teacher as more important than that of academic counsellor. Concerns were also raised about whether academic counselling was meeting the needs of all learners.

Deputy Principals and middle leaders believed academic counselling was important and needed within their schools, however they also acknowledged the high workloads associated with institutionalising the work into the programme of the school and described this as a significant barrier. The process relied on quality data, data entered into SMS in a timely manner, and a comprehensive and up-to-date knowledge of NCEA, UE requirements and pathways into tertiary study. Effective organisational planning was also essential for ensuring PST conferences ran effectively. Schools needed to plan in advance to ensure whānau/parents/caregivers were given the right information and appointment times. Some middle leaders expressed concerns that senior leaders scheduled competing school events at the same time as school-wide PST conferences. This lack of organisational planning was particularly frustrating. Undertaking quality academic counselling meant teachers and school leaders had to prepare in advance, but also undertake many follow-up activities after individual sessions with students and their parents/caregivers. Some participants felt there was resentment amongst staff at their school that their non-contact hours were now being used for these activities.

Finally, other key barriers to sustainability were associated with multiple initiatives occurring within schools that impeded improvement focus, a lack of resourcing and/or a lack of time associated with institutionalising Starpath initiatives. Staff changes also threatened the sustainability of Starpath initiatives within schools. This was particularly evident if a supportive Principal left and a new school leader arrived who did not support Starpath work, and if resources were tight within schools.

# Major Learnings from Phase Two

Overall, our analysis has revealed mixed results across Starpath Phase 2, in terms of impact and effectiveness on teacher/school leader practice and student achievement. Qualitative data have indicated that while schools really valued the partnership with Starpath and its practical focus on improvement efforts, particularly in the area of data utilisation, much more intensive work was needed.

According to Bryk, Gomez, Grunow & LeMahieu (2015) it is vital to understand variability in student performance and school practice. They argue that understanding variability makes visible the "hidden complexities... operating within organisations" that can be important areas for change (p.14). In other words, those looking to improve school systems need to better understand current school arrangements and practices that produce inequitable results.

Whilst school participants were very positive generally about the Starpath PLD work there was a danger that school leaders, teachers and facilitators themselves succumb to 'activity traps' (Katz, Earl & Ben Jaafar, 2009); which snare them in 'doing' activities but forgetting the ultimate aim or objective. Results from this evaluation indicated that far more focused and intensive collaborative inquiry work was needed around the area of data utilisation and its use in a learning school model (Bryk et al, 2015). Although Starpath made a difference to teacher and school leader confidence in using data for tracking and monitoring purposes, data was not used systemically to improve school practice for diverse groups of students. This was difficult and challenging work, partly because secondary schools are complex organisational systems and often have multiple interventions which distract from focusing attention where it is needed. Overall Starpath findings indicated that a key challenge to improving student achievement was the need to collect, store and analyse different types of data to inform decisionmaking at different levels and for different reasons. In Starpath, diagnostic and development data were used at an individual student level to inform tailored academic counselling and Parent-Student-Teacher (PST) conferences. Data at this level were essential for students, teachers and parents/whānau to track and monitor individual progress, aligned to student aspirations and career trajectories and assess progress towards national qualifications.

However, classroom teachers and middle leaders (particularly Heads of Departments or Curriculum Leaders) also needed data to track and monitor not only individuals, but groups of students within particular subject areas, and to assess their progress and performance against specific achievement standards. Data use at this level is often evaluative, to gauge how effective current curriculum and teaching programmes are for different groups of students and to ensure students are given the opportunity to sit external standards. Some of Starpath's most recent analyses indicate positive relationships between the proportion of externally assessed standards taken at school and success at university, for example in STEM subjects (Irving, Novak & Turnbull, 2015). However, this study also indicates that Māori and Pasifika students had the lowest proportions of enrolment in externally assessed standards of any ethnic groups. There are clear implications here for academic counselling within schools, and for greater alignment and coherence between school offerings and degreelevel study requirements. Data-focused inquiry work must be coupled with high expectations teaching (Rubie-Davies, 2015) and a thorough examination into whether there are equitable opportunities to learn for culturally diverse students across different socio-economic communities.

Evaluative data are also important for Principals and senior school leaders to analyse school progress against specific goals and key targets related to student achievement that are set in school charters and annual/five year plans. Starpath has found that these system-wide longitudinal data processes are difficult for schools to create and support on their own, and they need tailored and targeted processes that are developed for different purposes. Through the leadership initiative, it has been revealed that schools set too many goals and targets related to student achievement and that these are not well understood by middle leaders and/or teachers across the school. This limits the school's capacity to focus attention on particular areas and build the necessary commitment towards change. Starpath findings indicate senior leaders need help to channel energy towards a specific goal, which then aligns to ambitious achievement targets and focuses energy across the school community.

Starpath has also found that schools do not utilise perception data from students, their parents/ whānau, or teachers in ways which would enable schools to identify practices that enable and/or inhibit engagement in the work of change.

Triangulated evidence from across the three Starpath-led initiatives suggests a need for more focused PLD work with teachers and school-leaders to coach them through the reduction and removal of barriers to achieve the ambitious goals of this project. The Starpath PLD model was not sufficient; indeed most PLD associated with improved outcomes for students lasts longer and is more intensive (Timperley, Wilson, Barrar, & Fung, 2007). The PLD design was a cascading model, dependent on leaders and others with key roles (such as SAMs) to disseminate professional learning to colleagues at school. A lack of succession planning was particularly problematic if key participants left their schools. Teachers and school leaders with responsibilities also needed more external support from facilitators as well as dedicated time to involve others in the work. The ultimate aim of Starpath was to enable more Māori and Pāsifika students and others from low decile schools entering and succeeding within degree-level study. One concern is that this ultimate aim may have been compromised, partly through the involvement of other mid-high decile schools. A PLD programme

with a narrower (but deeper) focus may have been more effective.

In summary, Starpath has identified that teachers and school leaders require more innovative and intensive support to collect and analyse different types of data; including student achievement data (such as e-asTTle scores, PATs, NCEA and UE pass rates), perception data (such as how students, parents/whānau and teachers feel about school and the degree to which they feel valued and engaged), and systems data (e.g. course enrolments). Starpath has also learned that teachers, middle and senior leaders need specific, intensive professional development and learning programmes and sufficient time to learn how to do this work better within their schools.



# Changes and Challenges within the 39 Schools

For a long-term project, such as Starpath, there have been a number of changes within schools and educational contexts that may have impacted on the nature of partnership work within schools, and influenced student achievement over time. The following section details some of these.

Most of the Starpath schools have experienced some change within their school leadership teams during the time of the project. For example, 16 schools had a change of principal and in 14 schools there was a change in the SAM; and often this person was also a Deputy Principal. In some cases the change in leadership resulted in a strengthening of Starpath partnership work within the school but in others it had weakened the Starpath approach. It was helpful when the new person had prior involvement with Starpath in another school.

A challenge for schools in the project, particularly in the smaller, isolated schools, has been staff turnover, recruitment and retention. Project sustainability has been a problem in schools with high staff turnover and this has meant these schools have needed a constant re-training of staff. A further staffing problem arose in the smaller schools as they struggled to attract and retain subject specialists. At times a lack of trained specialists has affected the range of courses being offered to senior students and the quality of teaching for senior subjects.

Starpath has had to compete for professional development attention in an environment of multiple interventions; some of which are government funded. Low decile schools in particular may have taken up additional professional learning and development initiatives to address the multiple issues they face and to gain extra resourcing. Multiple interventions also result in intervention overload that can lead to teacher resistance to change as well as presenting considerable challenges in trying to isolate a Starpath effect.

Finally, Starpath facilitators have observed teacher

and school leader frustrations with the standardised testing available. In addition, limited technology within schools, coupled with low internet access or poor server capability, has led to problems with e-asTTle and consequently this has led to an increased uptake of the revised PAT tests. There has also been frustration expressed that standardised testing is currently to be limited to tests of literacy and numeracy with very few alternatives related to other curriculum strands.

#### Student Transience

The focus of Starpath has always been on student achievement, and data on student attendance or transience has not been systematically collected. However, information drawn from two different data sources provides some insight into student transience. As discussed earlier, our analysis found one student who attended seven Starpath schools (and still achieved Level 2), five students that attended five Starpath schools, 56 students who attended four Starpath schools, and a further 757 who attended three Starpath schools. Of the 67,729 students in the database for whom we have school data, 6,738 had a non-Starpath school listed as their last school attended. Te Kura Pounamu/The Correspondence School was the most common non-Starpath school, attended by 1,753 students. There were also four other schools which were listed as the last school attended for at least 100 students each. It is concerning that a large number of students are moving in and out of schools and exact figures are not known. More investigation is needed to determine the causes of student transience and the impact on their achievement.

# Changes within the External Educational Context

The wider educational environment that Phase 2 schools and the project have operated in has not been static. System-level data from Starpath schools have highlighted some intriguing questions about New Zealand's macro-education policy settings. The New Zealand Government has set Better Public Service Targets (BPSTs) for 2017, and

one of these is that 85 % of 18-year-olds will have achieved NCEA Level 2 or equivalent. Individual school leaders in some low-decile Phase 2 schools have commented on the pressures to meet this target, with serious concerns that academically capable Māori and Pasifika students are, and will be, counselled into vocational pathways rather than attempting more ambitious academic pathways.

Furthermore, recent changes to University Entrance requirements have led to a drop in success rates nationally, and this drop has disproportionally impacted on students in low decile schools. University Entrance is the minimum requirement for secondary students applying for entry into degreelevel study. Major changes to the criteria for UE were implemented in 2014. These included increased literacy requirements; the need to obtain NCEA Level 3; and a change in the requirements for the third approved subject. The 2014 results for UE revealed a drop in UE success rates for all secondary schools nationally when compared with 2013. However, students in low decile schools were disproportionally affected. They experienced an 8.2% drop in roll based success rates compared with a 5.2% drop for students in high decile (8-10) schools. In other words, in 2014 for every 100 students in high decile schools that did not obtain UE (but would have in earlier years), there were 158 students in low decile schools who were similarly affected. An unintended consequence of such changes may have resulted in a reduced emphasis on University Entrance.

#### Changes within Starpath

Starpath itself has changed. Just as in the school partners, staff have moved to other projects and institutions. In the last five years there have been eight changes among full-time staff, including a change of Director. In this situation, it has sometimes been difficult to ensure that all staff were focused on the same goals and carried the same message into schools. New researchers have had to be inducted into the project and the project has had to be flexible enough for staff to consider new ideas and constructive critiques.

## Next Steps

Despite the challenges it is clear that the Starpath work should continue. Starpath Phase 3 will have four key aims:

• To work in partnership with a smaller number of low decile schools and with a targeted focus on improving the numbers of Māori and Pasifika students achieving UE. Starpath believes that a target should be set for at least 30 % of all Year 13 Māori and Pasifika students in Phase 3 low decile schools leaving school with the UE qualification. In current Starpath schools alone this would mean approximately 323 more Māori and Pasifika students per year would leave school with UE.

• To develop a highly responsive, differentiated process for enhanced data utilisation and accompanying tools that enable tracking and monitoring of student progress toward aspirational goals of UE achievement and underpin overall school improvement. A key aim will be to improve school leader and teacher capabilities in interpreting and using different data sets to lift expectations and enhance practice and outcomes for individuals and groups of Māori and Pasifika students across Phase 3 partnership schools. The development of evaluative thinking (Earl & Timperley, 2015) will be an important aspect of Phase 3 work within schools. Such thinking involves exploring participants' theories of action, identifying important questions, determining data collection methods and organising the data to be accessible for interpretation.

• To provide a targeted school improvement initiative in Tai Tokerau/Northland and South Auckland, where Starpath has established relationships.

• To develop an enquiry-based evaluation plan from the outset of the project that informs key project outcomes and can robustly and reliably assess the impact of Phase 3 on student achievement, whānau/parent/caregiver engagement and school practice, and provide feedback to schools.

### To Conclude

Starpath has worked hard over the past 11 years to improve the academic achievement of Māori, Pāsifika and low income students so that they can progress to degree-level study. We have developed an approach that has contributed positively to a more data driven approach by Starpath schools to student achievement. The results are variable, reflecting many factors. These include differences in schools, multiple interventions from various programmes, changes in government policy and timing and implementation of Starpath interventions. There has been rich learning from Phase 2 of Starpath. We have endeavoured to develop a robust approach and to extract maximum learning from what we have done with schools. Relationships with schools remain positive, with a number agreeing to work with us in Phase 3. We look forward to contributing more to the challenge of increasing equity and excellence in outcomes for Māori and Pasifika students.



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Contact Starpath Project

The University of Auckland Epsom Campus, Faculty of Education Private Bag 92019, Auckland 1142 starpath@auckland.ac.nz www.starpath.auckland.ac.nz