



Centre for Studies in Multiple Pathways

**Centre for Studies in Multiple Pathways
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**Transitions from Secondary School into
Postsecondary Education and Training:
A Literature Review**

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Executive Summary

There is international concern at the failure of a considerable and growing number of young people to make an effective transition from secondary schooling to postsecondary education and training. Disengagement is a phenomenon that is removing a group of young people from the transition process while inadequate academic preparation sees others unable to craft an effective and appropriate pathway from secondary schooling to postsecondary education and training. The cumulative impact of this on countries is to create a seemingly intractable issue around a group that has come to be known as NEETs – those not in employment, education or training.

At a time of recession the visibility of the issue is increased by growing numbers of unemployed youth but careful distinctions are made between those who are temporarily (but perhaps not for short periods) unable to secure employment despite being prepared and able to meet the requirements from those who are inadequately prepared and through the process of disengagement not actively looking to engage in employment or further training.

It is clear that simply focusing on gathering credits as they proceed through senior secondary education, student credit choice, credit connection and subsequent course choice become central to a successful educational and employment outcome.

The issues outlined in this review are shared to a remarkable level similarity between New Zealand, Australia, Canada the United Kingdom and the United States of America. These unitary centred systems where students follow a pathway that is essentially the same for all students in the senior secondary school contrast with the dual systems of Europe and Scandinavia where more multiple pathways are available to students with flexible options that allow students to move across pathways as aspirations and aptitudes become clearer. This focus on multiple pathways is gaining ground internationally as a way forward and promises to open up ways for students to navigate through to qualifications that will take them into employment.

The array of current provisions that aim to bring purpose to students' progression may have served to retain students in education but have had little discernable impact on outcomes. This lack of certainty over impact is to some extent due to the lack of effective careers advice, information, education and training with many students acting blindly to give coherence and integrity to their programme and the lack of effective tracking and monitoring

systems that allow a more accurate picture of cohort performance. The size of both successful and unsuccessful groups are at this time largely known only through estimates of the extent of the size of groups such as NEETs, unemployed youth, teenage parents and so on.

The review surveys the issue of transitions from secondary schooling to tertiary / postsecondary education and training, the picture it paints suggests that where the education is working well for students it is working very well. Where there are issues, they are urgent and may be more widespread than conventionally accepted.

A The Issue

The incremental growth of education systems and the attendant increasing commitment to involvement in education – first a commitment to primary and elementary education, then the growth of secondary education and now a seeming commitment to tertiary, postsecondary education for all – has seen the development of transition points in the system between primary and secondary school and between secondary and postsecondary education. At the same time the clear division of the labour market into two clear and different markets – one for experienced competent workers, the other for entry level workers in which education becomes a market of potential for further learning on the job – have made the result of a young person's successful transition from secondary school to postsecondary school one of critical importance (Carnevale 2007).

This literature review is concerned to chart the transition from secondary education to whatever is to follow, university, polytechnic, trades training, workplace training and so on. Considerable argument has been put forward calling for educators to address issues of the gap between secondary and postsecondary education programmes (c.f. (Hoffman, Vargas et al. 2007) and for increased integration between secondary and postsecondary systems in which are set on students proceeding seamlessly to a postsecondary credential. This extends from calls for the elimination of the transition between secondary and postsecondary (Hoffman, Vargas et al. 2007).

This concern has become both urgent and focussed through the increasing understanding of the extent to which young people fail to make this transition successfully. This is apparent in a number of ways and across international boundaries and five countries share a set of characteristics (Middleton 2008) which lead to an inevitable conclusion that the education pipeline is leaking particularly for low income and many other students (Goldberger p.39).

The difference between low income students and high income students in such critical measures as high school completion, getting the high school credential, preparation for postsecondary, enrolment in postsecondary programmes and persistence in them is consistently a gap of 30% (Goldberger 2007) (pp.29-30) (Kazis, Vargas et al. 2004) (p.3.)

Introducing a book dedicated to innovation aimed at increasing postsecondary credentials for underrepresented youth, Kazis, Vargas and Hoffman (2004) are clear that there is agreement among the contributors that the issue is not just about success in high school but also about success at postsecondary levels, it is not just about access to postsecondary study but also about completing qualifications and it is not only about the efficiency of the pipeline, it's also about equity and finally not just about attainment but also about learning (Kazis, Vargas et al. 2004). The issue is that older adolescents need more high-quality schools and learning options and policy settings need to respond to this through addressing issues of finance, accountability and governance in order to effect change to bring school and further and higher education into "a more coherent whole" (Kazis, Vargas et al. 2004) (p.9).

B Transition to Tertiary

B.1 New Zealand

There has been a steady 13% increase in retention in the senior secondary school (Year 11-13) during the period 2004 – 2010 which included a 31% increase in Year 13 (NZQA May 2011) (pp.6-7). There has also been an increase in participation in tertiary education as a result of the competitive market-based policies in the late 1980s and 1990s (McLaughlin 2003). This large increase has however not addressed issues of access as the increases have been achieved by "growing the national higher education portfolio downwards", in other words, developing and including in the tertiary sector low level programmes that previously would not have been (Middleton 2008). Furthermore disparities continue for Maori, Pasifika and other students from lower decile schools and the government spreads assistance to all students in a untargeted manner (McLaughlin 2003).

New Zealand had previously seen discussions of the need to address issues of the transition to tertiary education such as those of Capper (Capper 1986; Capper 1993) and even policy developed (Ministry of Education 1993) but these remained largely ignored until the development of new policies, first by the Labour-led government (Ministry of Education

2008) and subsequently by the National-led government in the form of the Youth Guarantee Policy.

However the gaps in achievement between European and Asian on the one hand and Maori and Pasifika on the other remain stubbornly large. At NCEA Level 1 the gap between New Zealand Pakeha students and Maori students has been at an average of 25% while that of Pasifika has been at an average of 33%. It is clear that given these gaps, simply increasing retention will not increase the likelihood that increased numbers of Maori and Pasifika students will successfully approach the point of transition at the end of Year 13 ready to make a successful transition into the next stage of education and training. This is notably the situation with regard to the attainment of University Entrance where the gap between European / Asian students and Maori / Pasifika continues to get wider (NZQA May 2011) (pp.49-50).

This description does not take into account disengagement. *“New Zealand has one of the highest proportions of disengaged 14-18 year old students in the OECD countries”* (quoted in (Boven, Harland et al. 2011) (p.23). Among school leavers *“far too many”* are leaving school early and not successfully transitioning to work with *“Maori and Pasifika youth more likely than other youth to have left school educationally disadvantaged”* (Boven, Harland et al. 2011) (p.2). It is noted that *“by age 16, 36% [of students] are reported to usually or always bored and one quarter want to leave as soon as they can, or already have”*.

These patterns result in unemployment levels of 40% of youth aged 15 – 24 years (NZ Department of Labour 2011). It is known that New Zealand youth aged 20-24 years have a similar statistical profile for employment, engagement and successful transitions as 20 – 24 year old youths in other OECD countries. It is clear that it is the 15-19 year old segment of the youth group that marks New Zealand out. In the 15-19 years age group, 9.6% of males and 7.3% of females were NEET (Not in Employment, Education or Training) with those levels rising in the 20-24 years age group to 11.9% and 10.3% respectively. Youth employment at June 2011 stood at 52.2% (total population 63.8%). (NZ Department of Labour 2011). The discussion of youth transitions in the United Kingdom is very focussed in youth employment and the issues for this of the youth labour market (see p. Xx below)

Youth who are disengaged, not in employment education or training (NEET) and inactive earn less (Scott 2009; Earle 2010; Boven, Harland et al. 2011), are likely to engage with the justice system (Scott 2009; Boven, Harland et al. 2011) get involved in drug and substance abuse be teen parents, and be at risk of suicide and/or have mental or physical health issues

(Boven, Harland et al. 2011). The cost to New Zealand of this NEET group is variously estimated at being between \$900 million (Boven, Harland et al. 2011) and \$1 billion (Middleton 2009). This estimate is derived from economic impact reports from other countries (Alliance for Excellent Education 2007; iNACOL 2009) which take into account a range of factors that include the social costs, justice, welfare benefits taxes that are not paid and so on. There is also a small number of New Zealand studies such as the PWC COMET Report (Middleton 2009).

The National Certificate of Educational Achievement (NCEA) is a three level flexible qualification that brings together a set of standards that generate credit at one of three levels across a wide range of subjects (Madgar and McKinley, 2011). The secondary school “graduation” in the US is the High School Diploma. In New Zealand it is NCEA Level 2. However neither qualification is a guarantee of a successful transition between secondary school and postsecondary study. There has developed in New Zealand a picture of the relative worth in terms of transitions of the three levels of the NCEA.

Level 1	Relatively low worth in transitions other than to Youth Guarantee places in a tertiary institution.
Level 2	Improved likelihood of transition to a Level 1-3 certificate or to industry training (Ussher 2006)
Level 3	improved possibilities for transitions into bachelor’s degree level programmes (Ussher 2006) which could be in an Institute of Technology, Polytechnic, Wananga or a small number of Private Training Establishments but only in a University if the fourth <i>de facto</i> level of University Entrance is achieved.

Madgar., McKinley, Deynzer and van der Merve (2011), in a study of the “stumbling blocks” and “stepping stones” has shown that it requires more than simply generating credits and cashing these in for entry to a postsecondary programme They identify a number of factors that affect the transition from school to, in this case, university. These factors can be characterised as pre-transition, post transition and enduring characteristics (Madgar, McKinley et al. 2010).

Leading up to the transition these pre-transition factors include the development of clear academic goals, the growth of realistic expectations, a secure family environment preferably characterised by high family aspirations, and the early planning and sound selection of a coherent set of NCEA subjects related to the intended destination in postsecondary.

Unsurprisingly a robust academic preparation that led to the growth of independent study skills was also seen as important. Factors that became apparent as important after the transition included the level of success in the first year, having had admission requirements that exceeded the minimum, the extent to which the right choice of course had been made and the degree to which there had been continuity between the school curriculum and that of the university programme chosen. A layer over the top of all these factors is a set of enduring characteristics that the student has developed – personal determination, diligence and persistence.

This study usefully confirms what experienced teachers on each side of the transition divide recognise as, and in the vernacular, an “excellent student” for whom “things have gone well”. It is therefore not unexpected that a number of studies have identified the levels of school achievement over time as a critically important factor at the heart of disparities in postsecondary educational outcomes (Scott 2002; Ussher 2006; Loader and Dalgety 2008; Ministry of Education 2008; Earle 2010; Madgar, McKinley et al. 2010). It is also therefore a matter of logic that studies show that increased numbers of Maori students making the transition to successful university study could be achieved through increasing the numbers achieving University Entrance and that the lower likelihood of Pacific students’ making a successful transition is an outcome of lower average school achievement (Earle 2007).

The Madgar., McKinley et.al. (2011) study raises a further issue that suggests that the successful transition is also impacted on by matters that reflect a long term lack of connection with the purpose of schooling.

The students who were least successful in the transition process struggled with almost all aspects of what was expected of them. When reflecting on their approaches to learning, which involved procrastination, inadequate written work as a result of inadequate preparation and time given to such work, and reliance on lecture notes posted on the internet in place of class attendance, these students were often direct in their assessment of their own performance. They referred to themselves as “lazy” or “bad” but this did little to show them how they could change the situation for the better (Madgar, McKinley et al. 2010) (p.100).

A clear theme of the work of the Starpath Project at the University of Auckland¹ and some of the outcomes of that project (Madgar, McKinley et al. 2010) (Madgar and Mckinley 2011) make clear the role of the secondary school in setting up the conditions under which successful transitions are achieved from school to university study. Curriculum connection and alignment, careers information and advice, assistance with the mechanics of financial aid and general academic preparation are central to this role. But what the university does after the transition is also of critical importance – simply crossing the divide is not to make a successful transition. Making that step up in the first year of postsecondary study will in large measure also determine the success or otherwise of the transition. *The Bridge Project* study in the USA confirms these findings in the setting of a different system (Venezia, Kirst et al. 2003).

B.2 Australia

Interestingly while there had been an increase in enrolments in VET programmes during the 1990s, completion rates have shown no comparable increase. In fact the increase has been in the order of 100% in the 1990s especially in the area of apprenticeships and traineeships. One in eight Australians participate in VET in any one years, the majority do not complete a qualification (Lamb, Long et al. 2004). As do many other reports, Lamb, Long et.al. (2004) also note that low socio-economic status leads to significant differences in achievement and higher levels of non-completion with better performance of young women compared with males. This is a pattern repeated in school success with leavers who complete Year 12 (the senior years of secondary schooling able to make a more effective and successful transition. Overall participation in education and training for school leavers is lower in Australia than in peer OECD countries (Lamb, Long et al. 2004).

B.3 United States of America

The transition between secondary and tertiary has, in the United States of America, attracted various descriptions which include “*chasm*” (p.55) and “*a divided K-20 ecology*” (p.66) (Kirst and Usdan 2007). The overall picture in the US of the gap between low-income and high – income students is constantly at 30% difference for high school completion, high school credential, college preparation, college enrolment and college persistence (Goldberger, 2007).

¹ 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 is administered by the Tertiary Education Commission.

Kirst and Usdan (2007) are clear in their assertion that “*profound organisational, political and cultural chasms... have historically divided the system of K-12 and postsecondary education in the United States... [where the] two educational levels remain largely self-contained universes*” (p.55). “*Bifurcation has a long history*” (p.57) they note in describing the “*chasms*” that characterise “*structures, policies, habits of mind and professional relationships*” (p. in the USA (Kirst and Usdan 2007).

Cohort statistics give a better picture of progression through secondary school and on that basis, fewer than 20% of all African American and Latino Grade 9 (Year 10) students graduate on time and ready for postsecondary education (Conklin and Sanford 2007). White students are twice as likely to gain a degree than an African American Student and three times more likely than a Latino student (Venezia, Finney et al. 2007). In 2004 the attrition in the cohort was claimed to see just 18% of a cohort entering secondary education completing a postsecondary qualification. Of each cohort of first year secondary students in the USA, 30% do not get the high school diploma (Kazis, Vargas et al. 2004) (p.2-3). (In an unpublished paper Middleton (2010) estimates that figure to be 29% in New Zealand (Middleton 2011). Schwartz (2004) notes that while 90% of students declare an intention to go on to postsecondary education only 75% actually do so (Schwartz 2004) (p.21).

The scale of these issues in countries other than New Zealand is astonishing – in the USA in 2000 there were 3.3 million 16-24 year olds who did not have a high school diploma and were not attending high school or college. Back then it was already 1 in every 3 Hispanics and 1 in every 5 African Americans (Allen, Goldberger et al. 2004) (p.221). One other report headlines the “fact”: that one high school student in the USA drops out “every nine seconds”!

B.4 Canada

Gilmore (2010) reports that 75% of Canadian youth participate in some form of post-secondary education within 2-4 years of completing high school but this is not representative of the whole community nor do rural youth make successful transitions to the extent that urban students do to the extent of double the urban rate (Richards 2011) (Kirby 2009) and as is the case in other similar education systems, there are issues of success and transition among indigenous groups of which 72% of indigenous youth either did not graduate from high school, or access postsecondary education after high school or dropped out of such programmes after enrolling (Gilmore 2010) (Kirby 2009). As with the other countries in this review, young men outnumber young women in dropout rates, indigenous students showed

higher likelihood of dropping out and unemployment among dropout students rose during times of economic recession (Thegraduatepapers.com 2010).

Writing in 2011, Richards (2011) notes that Canada, while making progress in the previous two decades in lowering dropout rates, they remained high among boys and “*the groups characterised by poverty and the cultural traditions that do not stress formal schooling.*” (Richards 2011) (p. 1).

B.5 United Kingdom

The literature on youth transitions from school to tertiary in the United Kingdom traverses in a similar fashion those clear issues that emerge in other countries (BBC News 2002; Cassidy 2005; Watson 2005). Reflecting on the problems that surround youth transitions in the United Kingdom, Keep (2011) lists the following as key “problems” around youth transitions:

- employer dissatisfaction with the outcomes of schooling i.e. the perceived employability of young people;
- extended and risky transitions;
- the changes to the labour market (e.g. casualisation, entry level employment divorced from training);
- shrinking of the youth labour market (from 75% of 18 year olds in work down to 40% in 2011);
- youth under-employment (low levels of employment of young people generally);
- lack of progression (dead-end low paid jobs);
- rising skill (qualification) levels not leading to increased gross value added or productivity.

(Keep 2011)

In the UK, there are calls for a increased provision of high quality careers information and guidance on the grounds that it would enable better matching of individual abilities and career aspirations with what is actually available in the labour market, make young people more aware of what skills and qualifications they need to meet their choice of occupation and to help ensure a connection between the courses they take and the job/occupation they have chosen (Keep 2011).

“If current economic trends [in the UK] continue on the same trajectory, we expect that 20% unemployment for 16-19 year olds will become the new norm with numbers reaching 1.2 million (a 23% increase on the current level), unless significant reform is undertaken to improve the skills base and opportunities of young people with qualifications levels below level 3” (Birdwell, Grist et al. 2011). The increased focus on the youth labour market that the UK brings to the discussion is helpful and suggests a direction that New Zealand might consider. The recent response of the Government to the Wolf Review of Vocational Education agrees that *“the current system of vocational education [in the UK] is failing too many young people”* (p.2) and attributes the following causes of that failure to:

- indifferent teaching of highly specialised subjects from teachers who are not well enough versed in the courses they are leading;
- young people undertaking courses designed for adults with experience of the area in the workplace;
- perverse funding incentives that encourage providers to seek course with greatest returns rather than those appropriate to the needs of the young learners;
- students with a weak base of fundamental skills notably English and mathematics;
- an insufficient supply of apprenticeship places for 16-18 year olds;
- an attitude that sees vocational education as second class and for the less able backed up by claims of “equivalence” between qualifications that are “simply unbelievable.”

(Department for Education 2011) (p.2)

C Factors that Impact on Student Transitions

C.1 General

A range of factors offers insights into the explanations of and patterns around transitions and one key one is the organisation of education systems into sectors that have divergent histories, boundaries governance and policy structures, no tradition of working together, relatively few accountability systems in which no-one is held responsible for those who fall in the cracks. More importantly there is a lack of alignment K-12 / postsecondary (Venezia, Finney et al. 2007).

In a literature review completed in 1999 in Australia, Evans (1999) considers the evidence related to the impact of general characteristics on the transition to tertiary study with the following results:

Age:	There is mixed evidence which suggests that age has low predictive power in considering success in transitions or persistence after the transition – the issues cut across a wide age range (p.6).
Ethnicity	Aboriginal and Torres Strait Islanders are consistently less successful in managing transitions which reflects the evidence in North America (p.6).
Gender	the study produced little evidence on transitions other than to emphasise the pattern of increased success gained in course completion and time taken to do so that female students (p.7).
SES	Predictably higher socio-economic status has increased levels of probability for making successful transitions (p.11).

In general this major survey of literature to that point in time concluded a little inconclusively that *“these studies suggest that transition and persistence are related to background characteristics, disposition on entry, goal commitment, experiences after entry – including academic and social integration – and external and institutional factors (Evans 1999)*

It has been argued (Middleton, 2008) that the phenomenon of the growth of the comprehensive high school as the predominant model of secondary schooling coupled with the increasing length of time spent in secondary schools has been the root cause in the rise of disengagement and dropping out which has reached concerning levels in a number of countries.

C.2 Disengagement / Dropping Out: The Transition Out

Engagement of students is not a mystery and studies have shown that certain practices are more productive than others. These are relatively simple actions such as student-teacher contact, cooperation among students, time on task, high expectations, and respect for diverse talents and ways of learning, inclusive and supporting environments which communicate a clear expectation of achievement and so on (Kuh, Kinzie et al. 2007). Despite this body of knowledge, disengagement has established itself firmly in education systems. *Academic disengagement of high school seniors is at an all time high which shapes how they performs when they [go on to postsecondary]” (Bridges and Kuh 2004) (p.179).*

The education systems of New Zealand, Australia, Canada, Great Britain and the United States of America share a characteristic which sees a disengaging group (perhaps as many as 20% of each cohort) leave the education system. This group in the United States was referred to as “drop-outs” but the complexity of the phenomenon, systemic and structural features of education systems and characteristics of the disengaging group each deserve a more sophisticated analysis while the reality remains that these students do indeed drop out of the system (Tyler and Lofstrom 2009), (Schwarz 2011).

Student drop-out rates in Australia are estimated to at least 20% (Hinde 1999), In Canada over 20% of school students drop out of before completing secondary school (Thegraduatepapers.com 2010), The school dropout rate at the age of 16 years in the UK is 25% (Cassidy 2005) and continued to get worse at the age of 18years leading to calls for reform of 14-19 education (BBC News 2002) – it is a consistent picture across a set of education systems.

Middleton (2008) has generalised the phenomenon of disengagement into three identifiable types of disengagement: physical, virtual and unintended (Middleton 2008). Physical disengagement results in students actually and, as the term implies, physically not being at school; Virtual disengagement occurs when a student attends school regularly, is generally compliant, no particular trouble to teach and might even be engaged in co-curricular activities but programmes have little impact on these students with a net result of low levels of qualifications gained and poor academic preparation for further education and training; unintended disengagement is a reflection of random course selection based on factors other than the importance and relevance of particular courses for a future pathway and comprised of inconsistent results which lack integrity and coherence and do not become a platform from which to successfully make the transition into postsecondary education and training. (The Starpath Project is highlighting these factors as it builds a picture of the importance of factors such as those which lead to unintended disengagement. These patterns have seen the rise of the NEET (Not in Employment, Education and Training) group.

A recent headline noted that every nine seconds in the United States of America, a student becomes a drop-out. Disengagement and dropping out has been labelled as “the silent epidemic” (Bridgeland, Dilulio Jnr et al. 2006) and is certainly a clear unintended and undesirable transition that students make. Interestingly, it is reported that 70% of drop-outs are confident that they could graduate from high school (Bridgeland, Dilulio Jnr et al. 2006) and emerging patterns from New Zealand’s first tertiary high school lends substance to this

claim ((Middleton 2011). A major report on retention and transitions in Australia (Ryan 2011) makes the point that completing the senior years of high school is the best guarantee of the best labour market outcomes and emphasises the importance of a planned transition in its conclusion that promoting the senior years of high school (i.e. Year 13 in New Zealand) for its own sake makes no sense.

Responses to dropping out and disengagement are emerging both within New Zealand and in other countries. Ohio USA has instituted “dropout recovery community schools” offering a range of programmes such as life and family-skills training, service-learning and community service, computer assisted instruction, remedial education programmes, individualised programmes, counselling, classes with a trades and employment focus, and some assistance with conflict resolution (Ohio School Leaders 2008). A survey of research into dropping out uses four categories to group factors: educational performance (as might be expected), behaviours (absenteeism, engagement, social and levels of out-of-school employment), attitudes (aspiration and expectations) and background (ethnicity, first generation students, experience in pre-school education) (Rumberger and Lim 2008). It is a complex issue.

C.3 Comparisons of Education System Types

When comparisons are made of the transitions that typify education systems in different countries, two clear groupings emerge:

System Type	Defining General Characteristics	Example Countries
Unitary Systems	<ul style="list-style-type: none"> · one general education offered to age 19 · Comprehensive secondary schools · historical tradition of universal primary education and an elitist provision of higher education; · trades predominantly “taught” on an apprentice workplace model · pattern of incremental growth of universal education – first primary, then secondary and latterly postsecondary · comprehensive secondary schools with increasingly homogenous general academic curriculum · diminishing presence of industrial arts in secondary schools · similar levels of indicators of disengagement, and truancy · school dropout rates consistently at around 20% of 16 year olds and low levels of engagement in education in the age range of 14-19 years 	<p>New Zealand United States of America Australia United Kingdom Canada</p>

Dual Systems	<ul style="list-style-type: none"> · differentiated school curricula in senior secondary school · secondary school characterised by vocational / academic theme and focus · general education continues alongside the vocational emphasis · low levels of disengagement in secondary schools and high levels of engagement in 14-19 year education. · work experience more prevalent · sound student tracking systems 	Sweden Denmark Finland Norway Germany Netherlands
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Middleton (developed for this review)

C.4 Concept of readiness to make a transition

The traditional notion of students being required to meet a “standard” prior to progressing through the education system has by and large been replaced by a system in which promotion is automatic with one important exception. When it comes to the point of transition between secondary and tertiary school the transition opportunities open to students are prescribed by entry requirements to both institutions and courses.

A focus has developed on the ways in which schooling prepare students for postsecondary education and employment and the extent to which this is achieved with a focus on a career. Hoachlander and Stearns (2007) assert that such “multiple pathways” should have a “rigorous academic core”, a “technical core”, have a “work-based learning” component and be supported well by a range of services (Hoachlander and Stearns 2007).they believe that such pathways will prepare students for the full range of postsecondary opportunities

The apparent lack of preparation of students for tertiary education has brought about a focus on readiness for college and university. A lack readiness is perceived as a critical gap in the progress of students towards and between postsecondary from secondary education and this means that secondary school exit standards need to aligned to postsecondary entry requirements (Conklin and Sanford 2007), (Venezia, Finney et al. 2007) (Tell and Cohen 2007). Being ready to make a secondary / postsecondary transition is critical in maintaining a seamless progression through education.

Conley has been persistent in calling for increased attention on the role of secondary in preparing students for success in postsecondary education. His substantial contribution to the understanding of “college readiness” (Conley 2005), (Conley 2010). He summarises this as requiring a strong focus on appropriate reading and writing skills which are fundamental

to success in postsecondary education as well as the requirement that students “think” mathematics as well as be able “to do” mathematics. He also draws attention to what he calls “cross cutting skills and dispositions” which include the ability to:

- *understand research results;*
- *conduct variety of types of enquiry;*
- *formulate / refine research questions;*
- *identify issues;*
- *judge degree to which evidence supports an opinion;*
- *identify information that supports / refutes a point of view;*
- *think critically.* (Conley 2007)(p.98).

He further notes that the disconnect between secondary and tertiary goes beyond being merely structural but is “deeply rooted in cultural and functional differences in which the high school has a focus on transmission of content while the postsecondary environment seeks to use content to stimulate ways of thinking”(Conley 2007). Linking high school and postsecondary measures of success is important (Conley 2004).

C.5 Seamlessness

In the early 1990’s the notion of seamless education (Ministry of Education 1993) was a vision of a system “*under which it no longer matters with which provider or in which educational programme students are studying. All learning will lead to qualifications within the same framework.*” The National Qualifications Framework and the new school curriculum were in their early stages of development or implementation. The ideas were expanded with suggestions:

- that students would *be able to undertake education and training in more than one setting at the same time*”;
- that senior secondary school students might be able to “*combine regular school courses with polytechnic or university courses and workplace training provided by local industries*”;
- institutions could enter into agreements with each other;
- schools would have the “*opportunity to offer courses which have previously been available only at polytechnics or universities*”;
- “*Industry training organisations will be able to develop training programmes both on and off the job to meet their industries’ future needs.*”

Seventeen years ago these ideas were being proposed and there has been some movement towards their realization with perhaps greatest progress being in the industry training area with developments such as the recently announced vocational pathways. Critical reforms such as minimizing a “time served” approach to gaining qualifications and it was only in 2010 that students wishing to leave school to pursue a different form of education and training could do so within constraints without financial penalty.

D A New Orientation to Career and Technical Education

There is growing attention being paid in the United States to the development of career pathways which are a coherent sequence of career and academic courses which begin in the secondary school leading to industry recognised qualifications from certificate through to degrees (Hull 2005; Hughes and Karp 2006) cited in (Offenstein, Moore et al. 2009). Such pathways require the development and maintenance of partnerships between secondary schools and postsecondary providers, multiple entry and exit points. While there is mixed evidence of the impact of these developments on achievement there is clear evidence of positive impacts on outcomes and on lowering the incidence of dropping out (Offenstein, Moore et al. 2009).

“Career technical” education is an evolution of career education from “vocational education” and has seen a renewed interest in career and technical education after a turn away from the traditional industrial arts programme in secondary schools. A recent expression of this development has been the development of the tertiary high school in New Zealand and of career academies in the USA (Offenstein, Moore et al. 2009; Middleton 2011). Career academies, school-within-school programmes operate in high schools and offer career-related curricula through academic coursework balanced by partnerships with local employers. A study of such academies found that had positive effects on staying at and progressing through school but no discernable effects on completion of high school for at-risk students who were potential drop-outs (What Works Clearinghouse 2006).

D.1 Multiple pathways, linked learning and other “solutions”

A recent book entitled *The Death of the Comprehensive High School?* (Franklin and McCulloch 2007) poses the question that the questioning of the extent to which existing models of secondary schooling can be expected to cater for the range of students that now enter its gates to receive an education that prepares them for the world to follow. The collection of essays typifies the issues as international and urgent. A further analysis strikes

a grim note. In its assessment that high drop-out rates, the lack of preparation for postsecondary work, the career and education gaps between different groups in the community and the widespread student disengagement coalesce in a conclusion that comprehensive secondary schools “simply don’t work very well” (Oakes and Saunders 2008) (p.3). They go on to describe secondary education in the United States as being in a state of “*pervasive dysfunction.*” But rather than pursue the old binary argument between an “academic” or a “vocational” secondary education they report on what some call “the third way” – multiple pathways an approach whose “*advocates seeks to move beyond what they see as a tired debate between academic and vocational education and the traditional tracking of students into different high school courses*” (Oakes and Saunders 2008)

They further define multiple pathways as “*high school reform that replaces the ubiquitous comprehensive high school with a portfolio of smaller high schools and programs within high schools (“pathways”) that provide both the academic and real world foundations students need for advanced learning, training and preparation for civic participation*” (Oakes and Saunders 2008) (p.6).

(Wyn, Cuervo et al. 2010) support calls for the implementation of more flexible pathways but caution about the limitations of the metaphor of the pathway – they see a risk of the flexibility and complexity of pathways being masked by the suggestion of a linear approach in the word “pathway”. Having noted that, there is some agreement as to the characteristics of quality pathways and provision. The following table shows the connections between various analyses.

Component	California Dept of Education (2008) p14	Oakes and Saunders (2008)	THS (Middleton 2008)	ECHS (Hoffman 2004)	The 3 rd Way (Atkinson and al. 2010)
Curriculum	An integrated core curriculum	A college preparatory core	Integrated curriculum based on the NZ Curriculum	Integrated standards-based academic content and technical content	CTE as a part of <u>all</u> students' high school
Career and Technical Education	An integrated career technical core curriculum	A professional or technical core grounded in real-world standards	Base of preparing for trades and careers leading to CTE programmes	Broad-based CTE offerings introducing students to wide career options	Produce life-long learners academically skilled and career- ready
Activity outside the school	A series of work-based-learning opportunities	Field based learning, realistic workplace simulations	Retain links with previous school, personal development opportunities	Work-based learning and experiences	
Support	Student support services	Additional student support	Significant additional student support		
Professional development	PD to give career and technical educators the tool to integrate curriculum		High school teachers working with CTE teachers		
High School / tertiary Links			Complete integration of high school and tertiary programmes		Business leaders linked with educators
Other features		Promote students entrepreneurialism to aid career interests		Link secondary with post-secondary	Work within existing structures

Middleton (2011)

Four essential components of a multiple pathways approach have been distilled which are:

1. a secondary school core curriculum that allows students to reach university entrance standard;
2. a professional / technical core that is grounded in academic and real-world standards;
3. workplace experience and field-based learning
4. clear additional support to meet student needs (e.g. supplemental instruction, transport assistance, counselling and so on.

(Oakes and Saunders 2006; Hoachlander and Stearns 2007; Saunders and Chrisman 2008)

Multiple pathways are seen as a radical reworking of the comprehensive high school and challenges the location and timing of both teaching and learning.

As educators have addressed the issues that are outcomes of the abrupt transition between secondary and postsecondary education, a different approach to designing the pathways between those two levels has emerged – multiple pathways. This is described as a “credible strategy leading to meaningful postsecondary credentials, a strategy of reconciliation that sees new pathways from early secondary through to a postsecondary qualification (Schwartz 2004). “We need a system for bridging the end of compulsory education and the beginning of work and further education” (Tucker 2004) (p.48)

Definitions of what constitutes “multiple pathways” abound.

The term “pathway” is a common term in education. Within the multiple pathways context, a pathway is defined as: A multiyear. Comprehensive high school programme of integrated academic and technical study that is organised around a broad theme, interest area, or industry sector (O'Connell 2010) (p.13).

*“...clear gateways and many flexible paths between these gateways”
(Callan and Finney 2003)*

“Multiple pathways give students access to a variety of industry-themed programs of study in such fields as business and finance. Biomedical and health science, building and environmental design, engineering, and arts, media, and entertainment to name just a few.” (Hoachlander and Stearns 2007)

“Multiple pathways offer to students and their families’ choices among a variety of high schools programs that provide both the academic and the career foundations students need for advanced learning, training, and responsible public participation.”
(Oakes and Saunders 2006)

E New Transitions through new approaches

Based loosely around the principles of multiple pathways and linked learning, a set of new approaches to organising the transition between senior secondary schools and post secondary education.

E.1 New Zealand Youth Guarantee Initiatives

New Zealand has responded to the issues of transition by developing a policy, Youth Guarantee, that aims to increase engagement, achievement and progress for 16-17 year old students through a series of initiatives and programmes that aim to move all young people to the goal of achieving NCEA Level 2 (Ministry of Education 2011). This policy will see the introduction secondary tertiary programmes, trades academies, fees free Youth Guarantee places in polytechnics and private training establishments, service academies, and vocational pathways² and this will be achieved in a setting that has more effective tracking and monitoring systems, strengthened careers advice and guidance and continuing support for students (Ministry of Education 2011).

These initiatives require new ways of working between secondary and tertiary sectors and the capacity to access funding from both secondary and tertiary government budgets (Middleton 2010 ; Middleton 2011). They also require a new legislative framework that was achieved by the Education Amendment (Polytechnics) Act No 2 of 2009 and the Education Amendment Act No 3 of 2010 which made provision for dual enrolment of a student in both secondary and tertiary institutions, the use of both secondary and tertiary funding for a single programme and established the legal framework for the discharge of legal responsibilities such as duty of care for students (Middleton, MacPherson et al. 2011).

² Visit <http://www.manukau.ac.nz/csmp/events/national-symposium/presentations/pathways> for brief descriptions of examples of these as presented to the National Symposium on “Multiple Pathways: Leading Students to Educational Success” held at Manukau Institute of Technology, July 2011.

E2 Manukau Institute Secondary Tertiary High School (NZ)

In 2010 Manukau Institute of technology opened New Zealand's first Tertiary High School (THS), a programme at a polytechnic offered collaboratively with secondary schools. Schools, parents, and the polytechnic identify students in Year 10 who have potential but are unlikely to succeed in a school setting and if selected they enter programme in Years 11 to complete their secondary schooling and a two year Career and Technical Education qualification. Students targeted for the programme are those identified by the school as underperforming, likely to fail at school, pose a potential threat of disengagement and be likely to finish school with little or no qualifications. While they would not yet be at risk educationally they would be clearly in risk. They would reflect the different ethnicities in the region and typically be first-in-family to undertake tertiary education and training (Middleton 2008).

This proposal led to changes in the education law to allow students to be simultaneously enrolled in two sectors thus enabling them to access entitlements to funding and to provide for genuine seamlessness between their secondary schooling and their postsecondary education (Middleton, MacPherson et al. 2011). Rather than being a reinvention of the Technical High Schools of a previous time, the development offers new purpose to students through early identification of vocational and career pathways, wraps holistic support around the programme and socializes younger students into a post-secondary environment. The programme is to not send students out of school but keep them in school but not at school (Middleton 2011).

E.3 Early / Middle College High Schools (USA)

The Early College High School (ECHS) developed in the United States with strong support from the Bill and Melinda Gates Foundation. Cunningham and Matthews (2007) describe it as a "blending of two levels of education" which requires new ways of thinking for both parties. They note that the high schools were "worried" about sharing if not "losing" their students even though the programmes attempted to seek collaboration through "porous points" (Cunningham and Matthews 2007)(p.195).

They note (pp.130-131) that for an Early College High School (ECHS) to work it is necessary to have academic and effective support, visible articulation between the high school and the college but it must be noted that the ECHS is in reality a new institution. Barth and Haycock (2004) assert that the opportunity for students to take higher level courses has a number of

benefits. Students of all abilities learn more in such higher level courses, are more likely to pass high-level courses than low-level courses and are likely to be better prepared for employment (Barth and Haycock 2004).

Hoffman (2004) provides a useful summary of the typical Early College High School. They are based on a set of design elements that include a curriculum to lead to high school and postsecondary credit, the opportunity for students to start higher level work as soon as it is appropriate, the assumption that all students can achieve a degree and the crossing over of boundaries between secondary and tertiary. Some have thematic approach such as science, health, engineering and so on (Hoffman 2004) (pp.213ff). It is what Grobe (2007) calls “another route to college” (Grobe 2007)(p.133).

Vargas (2007) notes that the policy that wraps around developments such as the ECHS can be graded on taxonomy of difficulty in achieving a sound policy position and outcome. Into the “easy category he places policy on dual enrolment / dual credit, college eligibility requirements and teacher qualifications. Harder are policy issues such as transfer rules, school-level autonomy, and state accountability systems. Hardest of all are policy settings for funding formulas and structures (Vargas 2007)(p175).

E.4 Comparisons: ECHS and THS

There are clear differences between the USA Early College High School Model and the New Zealand Tertiary High School Model:

Element	USA Early College High School (ECHS)	New Zealand Tertiary High School (THS)
Programme	High School prescribed courses with additional college papers	Integrated secondary and tertiary programme
Funding	Funded by state public instruction and relates to the college through a purchasing arrangement	Integrated funding from both secondary and tertiary sources
Target Students	Students self selected and reflect a cross section of college-headed students	Students nominated by secondary school as likely to disengage
Governance	School under the control of the state education / public instruction authority	School under the governance of the tertiary institution
Enrolment Status	Student legally enrolled in the public instruction (i.e. high school) system. Has “guest status at the college.	Student fully and legally enrolled in both the secondary school and the tertiary institution.
Legislation	Operates within existing legislative framework	Status of the THS prescribed in Education Act which provides for full, legal dual enrolment and a dual funding mechanism

(Middleton 2011)

School designs that integrate academic, technical and post-secondary education into a coherent pathway presume that students will rise to the challenge if given more demanding learning requirements along with clear paths to post-secondary education and learning and attainment. The challenge for education is to work through the “operational issues to make sure such hybrid institutions are possible for those young people who want to accelerate their progress to post-secondary credentials (Allen, Goldberger et al. 2004) (p.228).

E.5 Theme Schools (USA)

“Theme Schools” have emerged as a response to the issues of large schools with undifferentiated curriculum. Some examples are the High School for Environmental Studies, New York City, which undertakes projects such as roof top gardens throughout the city, New Gate School in Sarasota Florida, which has a research-oriented curriculum and Cristo Rey Jesuit High School, Chicago Illinois which specialises in corporate internships. These theme schools are part of the restructuring of large high schools into smaller units and essential features are curricular equity (all students undertake same programme), coherence (a set of inter-related programmes which increases engagement) and the magnet effect (bringing parents, teachers, admin, school staff and students together.(Martinez and Donis-Keller 2004)

E.5 Assisted Transitions (NZ)

E.5.1 Gateway

Gateway is a programme of structured learning experiences in the workplace undertaken by a student while still at school. It is formally planned, organised and agreed between the school and the industry. This enhanced work experience programme enables students to make transitions from school into either further workplace learning or into CTE with a basis for their decisions informed by their experiences. It is reported that in 2005, a total of 5,630 students participated in Gateway. The complexities of this programme are evident in a handbook (Tertiary Education Commission 2010) developed to assist in the delivery of this programme.

E.5.2 STAR Programmes and Funding

The Ministry of Education describes the STAR Programme as:

The Secondary Tertiary Alignment Resource (STAR) delivers additional funds to all State secondary schools with year 11-13 students. STAR assists boards of trustees, principals and schools to better meet the needs of students. It enables schools to help their students smoothly transition from school to further education and/or employment. There is a focus on at-risk students intending to go straight into the workforce. (Ministry of Education 2011)

Typically this resource is used to provide short taster-type courses at polytechnics or to fund more substantial interface programmes. There is great flexibility in its use. It is reported that in 2005, 17,000 students undertook courses at tertiary education providers, funded through the STAR programme. The conclusions of a review of STAR (Secondary Tertiary Alignment Resource) pointed to a range of issues and resource anomalies that this programme raised (Vaughan and Kenneally 2003).

E.5.3 Workplace Training

Workplace or industry training takes many forms from the informal novice / master relationship through to a variety of formal programmes. Modern apprenticeships are an example of workplace training intended to provide a supported transition from school to work. (Ministry of Education 2011) It was introduced and targeted at young people as a counter to the prevailing practices of employers who favoured older workers who could prove service rather than offer only potential (Mahoney 2009) This scheme sought to return to the practice of offering apprenticeships to school leavers and younger people.

A feature of this scheme is that it provides through the role of co-ordinators, support and guidance appropriate to its targeted group of 16- 21 year olds. The performance of young people in this scheme is variable depending on the particular industry, the quantum of learning, the previous qualification of the learner, ethnicity, and location among other things. Success and failure in a modern apprenticeship is complex. Completion rates are between 30% - 40% over 5-6 years.

F Allied issues of transition

F.1 Tracking students / data systems

The need for a clear system of data collection, availability and sharing is highlighted by many commentators as a necessary step in addressing the transition between secondary and postsecondary (Conklin and Sanford 2007). Dougherty and Mellor (2007) list what they consider to be the ten essential elements of system that provides the data environment in which adequate tracking of a student is possible and which delivers the requisite information to those responsible for their progress.

- *unique state-wide student identifier*
- *student level enrolment, demographic and programme participation into*
- *ability to match test records from year to year*
- *information on untested students*
- *teacher identifier system with ability to match teachers to students*
- *student – level transcript information*
- *student – level college reading test scores*
- *student – level graduation and dropout data*
- *the ability to match student records between P12 and HE systems*
- *a state data audit system*

(Dougherty and Mellor 2007)(p.234)

Ewell (2007) supports these requirements and would add

- *competency descriptors*
- *description of a considerably expanded array of educational encounters*

(Ewell 2007)(p.239)

F.2 Careers education, advice, information and guidance

Kirst and Venezia, leaders of The Bridge Project concluded in that study that the key factor in making successful transitions was the extent to which the schools provided all students, parents and educators with accurate high-quality information about and access to courses that will help prepare students for college level standards (Kirst and Venezia 2004). Others have noted the central importance of sound careers advice and the availability of career

models and exemplars). This is associated with accurate information about college and other postsecondary opportunities (Gandara 20087).

G Conclusion

The literature abounds with suggestions for changing the current situation in terms of education outcomes. Goldberger (2007) suggests the creation new small secondary schools, of programmes that provide multiple pathways to college readiness and assist the alignment high school curriculum to college requirements (Goldberger 2007). Tell and Cohen (2007) support this last suggestion (Tell and Cohen 2007). The net result of all of this and of other suggestions outlined in this review is to create a set of more supportive pathways,

Working in a setting which there are what Cork and Sandford (2007) describe as emphases on a set of bold audacious public goals such as college readiness for all but for which the solutions are concrete. And for which there is a consensus for a broad agenda and road map (Conklin Sandford, 2007).

From a wide set of responses, the notion of multiple pathways is one which hold promises but which calls for a radical re-working of the comprehensive high school (Oakes and Saunders 2008). These are expressed in a variety of ways, career academies which claim better performance, higher levels of attendance and greater persistence (Stoll 2008).

In summing up the discussion, Grubb (2008) notes that the “high schools perpetually in crisis” (Stoll 2008) (p.198) while Venezia (2008) pursues four key arguments which are that high school and postsecondary institutions want improvement, high school students aspire to postsecondary education, the gap between aspirations and attainment result from programmes that do not engage all students and, finally, education reforms must address the impact of students engagement especially that of students of colour and low-income students (Venezia 2008)> She notes that the situation in which in which one hundred 9th Grade (Year 10 NZ equivalent) students produces 19 postsecondary graduates is at best worrying and at worst likely to put communities under an intolerable pressure (Venezia 2008), a situation not dissimilar to that which applies to our performance here in New Zealand (Middleton 2011).

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