Vocational Training Queensland

Alternative education systematic review

Alternative education for at-risk adolescents: Evidence of positive impacts on academic skills, social skills and transition to further education, training or employment.

(A review of articles published and reports produced 2002-2020)

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Key Findings[*]

[*] Based on information from studies that met inclusion criteria for the review, as well as the broader literature.

At-risk adolescents: Commonalities on entry to alternative education

- Alternative education programs largely cater to youth 11-18 years, slightly more males than females, many individuals with Indigenous or minority ethnicity.
- Young people who attend alternative education programs generally have prior personal and social experiences that act as barriers to educational engagement, such as severe economic disadvantage, poorer cognitive function, abuse and/or neglect, physical and psychological illness or disability, engagement in antisocial and criminal behaviour.
- Prior academic experiences of young people who engage in alternative education include disrupted or poor attendance at school, disengagement from traditional education, permanent exclusion or school disciplinary absences, learning difficulties or special educational needs.
- Many young people who enter alternative education have consistently scored below proficiency on jurisdictionally recognised academic assessments or below expected level on literacy and numeracy assessments.

Alternative education and positive outcomes

- Generally young people who attend alternative education programs demonstrate positive academic outcomes including gaining recognised certificates, improvements in literacy and numeracy skills, increases in overall academic outcomes and/or progression.
- Overall, participation in alternative education is associated with increases in factors linked to academic self-efficacy, and academic self-efficacy has been demonstrated to be associated with higher levels of academic achievement.
- Participation in alternative education generally has a positive impact on socio-emotional outcomes, including class participation, engagement in education and maintaining positive relationships. However attendance and behaviour outcomes are mixed.
- Successful transition from alternative education programs to further education/ training or employment is generally high, especially if alternative education programs include elements of career/future planning and/or comprehensive re-engagement strategies.

Elements of alternative education that influence positive outcomes

- Compared to at-risk young people engaged in traditional education, those engaged in alternative education generally demonstrate better academic and personal and social outcomes.
- Elements of alternative education provision that have been demonstrated to be associated with better outcomes include a learner centred pedagogy, flexible scheduling, a greater sense of involvement and belonging.
- Longer duration in an alternative education setting may be associated with a reduction in positive outcomes.

Positive outcomes of alternative education for different cohorts of adolescents

Aa disruptive behaviour disorder and living in a single parent family have been shown to be associated with poorer outcomes from alternative education.

The evidence base

- As can be seen in Figure 1, the quality and quantity of research into comprehensive outcomes associated with alternative education participation is low.
- There are a lack of evaluation studies that meet recognised criteria to inform evidence-based practice in education, and there are substantial gaps in the evidence and research base.

Figure 1. *Evidence and gap map, based on included studies*

Intervention Variables	Student variables								Transition
	On entry to alternative education			Academic outcomes			Personal & social outcomes		
	Personal/ social experiences	Academic experiences	Academic skills	General	Literacy	Numeracy	Academic self-efficacy	Socio-emotional	
Alternative education	4	5	3	4	2	2	4	4	2
Compared to traditional education				1				1	
By program *elements*: Principles									
Practices & Pedagogy					1	1	1		
Curriculum									
Environment & Resourcing									
Relationships & Collaboration									
Transition & Planning									
For different *cohorts*, based on: Age									
Gender									
Ethnicity									
Regional background									
Prior educational/academic status									
Health/disability status									
Antisocial/criminal behaviour status									

Key

Overall quality of evidence	Criteria
High	Participants: Large, representative sample; high response/participation. Study design & implementation: Randomized controlled trial (RCT); systematic review/meta-analysis of RCT; comprehensive variables; long-term follow-up. Measurement & reporting: Valid, reliable measures; detailed description of elements, procedures, psychometric properties; data analytical plan; full data reporting; sophisticated statistical analyses; protocols for reporting & analysis of missing data.
Medium	Participants: Adequate (consistent with precedent), representative sample; good response/participation Study design & implementation: Non-randomized two group (cohort, case control); non-randomized one group (before - after, pre-test – post-test); extensive variables. Measurement & reporting: Standardised, consistent measures, precedent for use and/or multi-informant, multi-time-point; some high level statistical analyses; complete/almost complete data reporting
Low	Participants: Small and/or non-representative sample Study design & implementation: Descriptive study with analysis of outcomes; case reports; limited variables Measurement & reporting: Recognised, consistent measures; incomplete/inconsistent data/protocol reporting; limited/no statistical analyses
Inadequate	No apparent available evidence

Scope

Project Title

Alternative education for at-risk adolescents: Evidence of positive impacts on academic skills, as well as on educational and vocational related personal and social skills and on transition to further education, training or employment. (A review of articles published and reports produced 2002-2020)

Aim

To establish which elements of alternative educational programs have been demonstrated to be associated with increases in academic (general learning, literacy, numeracy) skills, as well as enhancement of educational and vocational related personal and social skills (academic self-efficacy, socio-emotional skills) and/or successful transition to further education, training and/or employment for adolescents with complex life experiences and learning needs (complex need adolescents).

Research Questions

1. What common personal experiences, academic experiences, and academic skills are demonstrated by complex need adolescents on entry to alternative education programs?

2. Has participation in alternative education programs by complex need adolescents been demonstrated to be associated with *positive outcomes* in the three key domains of:
   - Academic (general learning, literacy, numeracy) skills;
   - Educational and vocational related personal and social skills (academic self-efficacy, socio-emotional skills);
   - Transition to further education, training and/or employment?

3. (a) Do complex need adolescents demonstrate better outcomes in each key domain through participation in an alternative education program *compared to* participation in education within *traditional school* settings?
   (b) Which *elements of alternative education programs* for complex need adolescents have been demonstrated to be specifically associated with positive outcomes in each key domain?

4. (a) Following participation in alternative education programs, do *specific cohorts of complex need adolescents* demonstrate better outcomes in each key domain?
   (b) Are *elements of alternative education* programs for complex need adolescents *differently associated with improvements* in each key domain *dependent on membership of specific cohorts*?

Background

Alternative education

Alternative education is a term used to refer to the multi-dimensional delivery of education, through generally non-traditional pedagogies, curriculum, practices and environments, usually to young people with complex life experiences and learning needs (Aron, 2003; Thomson & Pennacchia, 2014). Although a wide variety of programs, providing education to a broad range of young people can be classified as alternative education, most provision shares a commitment to supporting young people to achieve their full learning potential, as well as develop skills that will facilitate productive membership of society (Te Riele et al., 2017; Thomson & Pennacchia, 2014).

The Australian and Queensland context

In Australia, alternative education programs trace their origins to progressive education movements and the federally funded Disadvantaged Schools Program of the 1970s and 1980s (Te Riele, 2014; Te Riele et al., 2015; Te Riele et al., 2017). In the past two decades there has been substantial growth in alternative education programs and initiatives as governments have introduced policies directed towards increasing school attainment and addressing high youth unemployment (Te Riele et al., 2015; Thomson & Pennacchia, 2014). As a result, education departments at both federal and state levels have been working towards developing policy and frameworks to support and manage this sector.

Mills and McGregor (2018) recently singled out the Queensland government's approach for mention in an overview of alternative education in Australia. The Department of Education, Queensland has engaged in wide ranging consultation to support their commitment to provision of high quality education to young people (Department of Education, 2019). As a result, the department has now developed procedures and models for the establishment and monitoring of alternative education provision in the state (Department of Education, 2020).

"An Alternative Learning Program delivers bespoke approaches to curriculum in response to students' individual learning, behavioural, social and wellbeing needs, in a supportive environment that is outside of a students' regular classroom, and for a period of more than five hours per week. Programs may include school established Alternative Learning Program and Positive Learning Centres" (Department of Education, 2019).

Vocational Training Queensland

Vocational Training Queensland (VTQ), a registered training organisation operating under the jurisdiction of Queensland's Department of Education, provides training to young people across Queensland who need support in developing their literacy, numeracy and learning skills. VTQ aims to provide young people with an education experience that prepares them for successful transition to further education, training or employment. In the most recent review of their host school (Brisbane Youth Education and Training Centre) it was highlighted that VTQ "leads the state in vocational education for students at risk" (Education Improvement Branch, 2020).

Method

Identification and selection of studies

The search strategy utilised in the current review was based on techniques recommended by The Campbell Collaboration (Kugley et al., 2017). Details relating to inclusion criteria and key search terms are presented in Table 1.

Table 1. *Search strategy*

| Category	Inclusion criteria	Key search terms
Participants	Age-range encompasses adolescence	Adolescent; youth; secondary school students; high school students
	At-risk	At-risk; high risk; educationally disadvantage; at-risk; disengaged; marginalised; out of school youth; school drop-outs; re-entry students
	Socioeconomically disadvantaged	Low SES; low income; economically disadvantaged; disadvantaged environment
	Ethnicity not limited, but ideally include minority ethnicities	Minority; Indigenous;
Intervention type	Alternative education program NOT residential	Alternative education; education alternatives; flexible learning; non-traditional education; compensatory education; remedial education/ programs
Evaluation design	Randomised control trial; longitudinal study; ex-post fact causal-comparative study	Program/ education evaluation; program effectiveness; outcomes of education
Outcome measures Academic	Achievement/certification based on curriculum standards; and/or	Academic achievement; achievement gains; basic skills; minimum competencies; educational attainment
	Specific skill improvement (literacy, numeracy, learning) based on pre- and post-intervention or control group comparison using a recognised measure.	Reading achievement; reading improvement; writing achievement; functional literacy; functional reading; maths achievement; functional numeracy
Personal & Social Skills	Academic self-efficacy# assessed through a reliable, valid measure and/or multiple measures/informants*; and/or	Academic self-efficacy; academic self-concept
	Socio-emotional skills# assessed through a reliable, valid measure and/or multiple measures/informants*; and/or	Pro-social behaviour; interpersonal competence; social development
Transition	Transition# to further education and/or employment documented in official records.	Transition; education work relationship; vocational education
Publication	Full text in English Full text publicly available Published/released 2002-2020	Limit: English No limit Limit: 2002-2020

Notes: #excluded from initial database searches – too limiting; conducted at full text review; *at least 3 separate measures.

Searches for relevant studies were conducted through four databases – ERIC, A+ Education via Informit Online, Education Source via EBSCOhost and Scopus. In order to maximise opportunities for finding grey literature, additional searches were conducted through Google Scholar and the Cunningham Library at ACER.

As noted in Table 1, attempting to include all criteria established for the current review at database search level resulted in limited matching records. It was, therefore, decided to search for records and review titles and abstracts of studies using a less restrictive criteria set. The inclusion criteria relating to psycho-social and transition outcome measures were applied at full text review.

Details of study identification, screening and selection for inclusion are presented in Figure 2.

Figure 2. *Flow diagram of systematic study identification and selection*
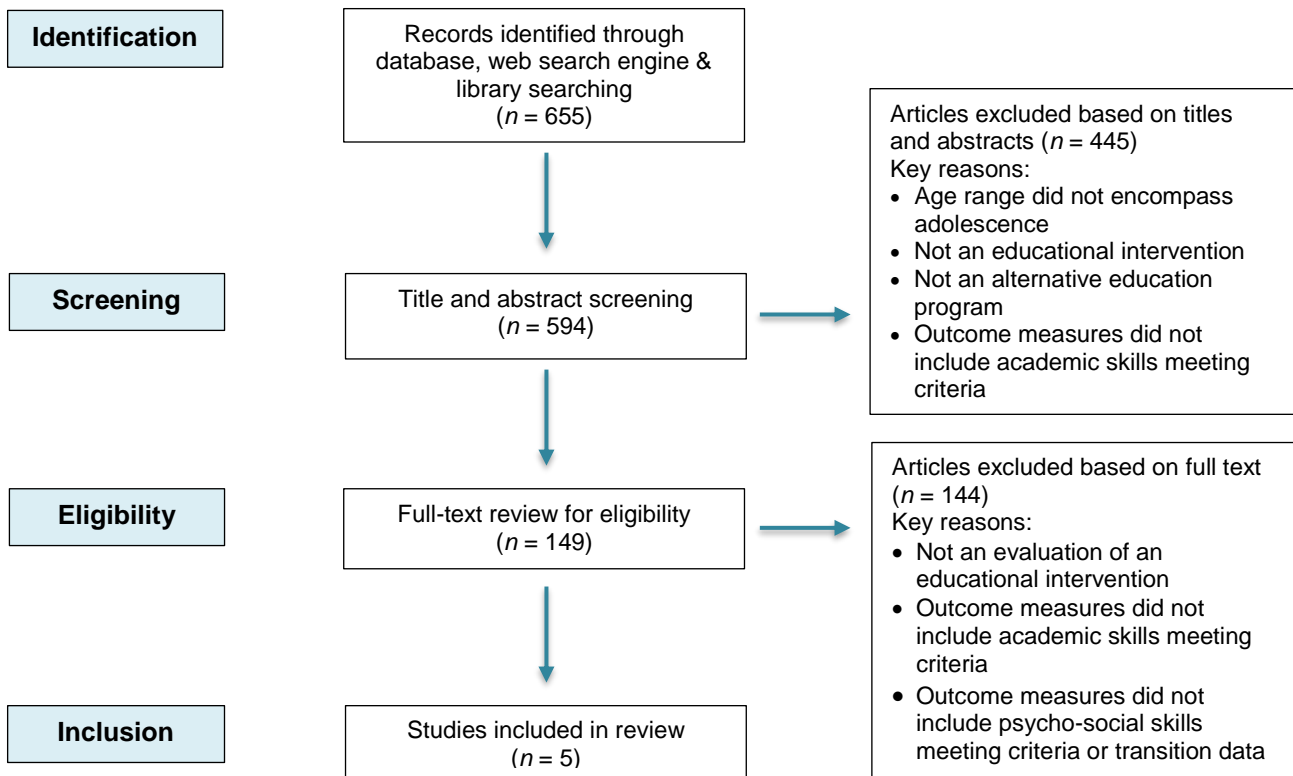
As can be seen in Figure 2, of the 655 records originally identified through searches only five studies met full inclusion criteria established for the current review. A large number of identified records were excluded because the related article did not constitute an evaluation study of an alternative education intervention. A number of records were also excluded because the article did not include adolescents as participants. It became apparent during full-text review that the measurement of outcomes in many records did not meet the comprehensiveness or standard established as inclusion criteria for the current review.

Characteristics of included studies

Characteristics of the five studies that met all inclusion criteria for the current review are outlined in Table 2. Studies were conducted in four different countries – Israel, the United Kingdom (UK), the United States (US) and Australia (2 studies) and final reports produced between 2003 and 2016. Only one study was published in a peer-reviewed journal, two were commissioned reports and two were doctoral theses. Participant numbers ranged from 52 to 507. Three studies utilised longitudinal data collection, while two studies involved ex-post factor causal comparative data analysis. Three studies evaluated a specific alternative education intervention at one site, one study evaluated a specific alternative education intervention across multiple sites and one study evaluated different alternative education interventions across multiple sites. In terms of reporting outcome measures that met inclusion criteria established for the current review, all studies reported academic outcomes, four studies reported outcomes relating to academic self-efficacy, four studies reported outcomes relating to socio-emotional skills and two studies reported outcomes relating to transition outcomes.

Table 2. *Characteristics of included studies*

Study	Participants	Study details	Intervention	Outcome measures		
				Academic skills	Personal and social skills	Transition
(Alfassi, 2003)	E: $n = 37$ C: $n = 15$	1. Israel 2. Cross sectional 3. DC: - 4. Published PR journal	E: Learning Centred Structured Academic Program C: Traditional Academic Program	Maths skill test; language skill test; Ortar Reading Test	Academic self-efficacy scale, Patterns of Adaptive Learning Survey (PALS)	-
(Kendall et al., 2003)	$n = 162$	1. UK 2. Longitudinal 3. DC: 2000-01 4. Commissioned report	1 jurisdiction; 6 x alternative education initiatives	Attainment certificates	Multi-source, multi-timepoint survey & report data	Program records
(Nibbelink, 2011)	E: $n = 158$ C_1: $n = 182$ C_2: $n = 167$	1. USA 2. Longitudinal 3. DC: - 4. Doctoral thesis	E: At-risk young people, alternative school C_1: At-risk young people, traditional school C_2: Not at-risk young people, traditional school	GPA # failing grades Dropout status	Attendance data x 2 Behaviour data x 2	-
(Te Riele et al., 2015)	$n = 98$	1. Australia 2. Ex-post facto causal comparative 3. DC: 2014 4. Commissioned report	The Melbourne Academy (Melbourne City Mission)	VCAL full/part certificate	ICAN engagement matrix	-
(J. K. Thomas, 2016)	$n = 56$	1. Australia 2. Longitudinal 3. DC: 2010-14 4. Doctoral thesis	The Reengagement for Disengaged Youth (ReDY) Program On-site	PAT numeracy PAT literacy School report grades	Multi-source, multi-timepoint survey & report data	Program records, research follow-up

Notes: Participants: E - experimental group; C - control group. Study details: 1 – country; 2 – design; 3 – date range data collection; 4 – type of publication. VCAL – Victorian Certificate of Applied Learning; ICAN – Innovative Community Action Networks (South Australia; origin of matrix); PAT – Progressive Achievement Tests.

Outline of alternative education provision in included studies

Learner centred structured academic program (Alfassi, 2003)

This study designated an experimental and control group. The experimental group consisted of adolescents attending an alternative education program that had adopted a learner centred structured academic program. The control group consisted of adolescents attending an alternative education program that had adopted a conventional academic program. As both groups represented alternative provision, features of each are outlined below.

Element	Experimental Group	Control Group
Principles	Learning difficulties reflect obstacles rather than inability; Alternative provision should aim to reduce disengagement through enhancing academic achievement, confidence and motivation.	
Practices-pedagogy	Uniformed, structured assessments to establish learner strengths & weaknesses; Young people enter program based on level of acquired skill, progress through level at own pace; work towards mastery; Flexible scheduling; Individualised, supporting choice in goals; Monthly evaluation of progress via a range of techniques, consultation & collaborative review of programming; Receive formal recognition on completion of level.	Uniformed, structured assessments to establish commonalities between young people; Young people placed in ability-level classes; Individual goal planning; Instruction delivered via lecture method, with some individual support; Evaluation via internal tests; Receive formal recognition on completion of program.
Curriculum	Modular with detailed syllabi to establish uniform expectations; Learning materials & sequence adapted to needs & interests of each learner.	Modular with detailed syllabi to establish uniform expectations; Uniform learning material & sequence for group.
Environment-resourcing	Ongoing teacher training coordinated within school; Timetabling to facilitate regular collaboration with other staff; Specialist support in developing adapted student learning materials.	Ongoing, non-specialised training coordinated by district; Periodic staff meetings.
Relationships-collaboration	Emphasis on teamwork between staff; Strong student-teacher relationships, with collaboration in planning & goal setting; Non-competitive student relationships.	
Transition-planning	Opportunities to reintegrate to traditional setting.	

Alternative education for young people disengaged from school (Kendall et al., 2003)

This study included data from six alternative education initiatives (AEI) within one jurisdiction. Common and, where appropriate, distinctive aspects of programs are outlined below.

Element	AEI 1	AEI 2	AEI 3	AEI 4	AEI 5	AEI 6
Principles	Aim: Deliver quality, relevant & positive learning experiences & opportunities which would contribute to immediate & long-term futures for young people by equipping with necessary skills they were lacking.					
Practices-pedagogy	Learning tailored to individual needs; Flexibility to accommodate changing needs & circumstances of young people; Offer educational programs that allow young people to experience success; Referrals via multi-agency/multidisciplinary panel; Programs included: work experience (sometimes age-based), personal & social education (generally), leisure-based activities; Ongoing evaluation & monitoring of program & individual students.					
Distinctive	Performing arts to develop confidence, self-esteem; vocational orientation	Significant personal & social component; individual education packages	Vocational orientation; environmental focus; enterprise scheme	Mini-school identity; support to attend other provision	Brokerage service; parent support group; social worker; home tuition	Focus on emotional support; support to attend other provision

Curriculum	Numeracy, literacy, creative subjects, recognised certificates	Numeracy, literacy, recognised certificates,	Recognised certificates, forestry-related,	School-type subjects, VET taster courses (age-based)	National Curriculum, recognised certificates	School-type subjects, some VET
Environment-resourcing	Safe, calm, relaxed environments					
Contact time	PT, ~2.5d/w	PT, ~6-25h/w	PT, ~3d/w	FT	PT/FT	PT/FT
Group size	1 staff: 5 yp	1 staff: 5 yp	1 staff: 2-3 yp	2 staff: 15 yp	Varied by activity	1-3 staff: 1 yp
Relationships-collaboration	Support, guidance & encouragement from staff, through adult-style, respectful relationships; Safety net of pastoral care; Collaboration with other agencies to supplement learning opportunities, offer specific expertise.					
Transition-planning	'Progression' training	Careers officer group sessions & 1-to-1 advice	Careers training package, interview; more intensive final weeks of program	Weekly careers session (age-based)	Careers advisor interviews	Careers training package, interview; careers advisor

Center Alternative School (Nibbelink, 2011)

This study designated one experimental and two control groups. The experimental group consisted of at-risk adolescents attending an alternative education program. One control group consisted of at-risk adolescents attending traditional education, while the other consisted of not at-risk adolescents attending traditional education. Features of alternative provision relating to the experimental group, where available, are outlined below.

Element	Experimental Group
Principles	Providing educational opportunities for young people unsuccessful in traditional education
Practices-pedagogy	Referral by student services team; Individual Growth & Achievement Profile (I-GAP; quarterly data) to measure progress towards proficiency; Length of enrolment, at least 2 quarters
Curriculum	-
Environment-resourcing	-
Relationships-collaboration	-
Transition-planning	-

The Melbourne Academy (Te Riele et al., 2015)

This study investigated a single alternative education model, offered over six separate sites. Features of the model are outlined below.

Element	All participants
Principles	Organisation: Melbourne City Mission (MCM) - not-for-profit community service, aim – to help people develop their own pathways away from disadvantage
Practices-pedagogy	Self-referral, formal referral from community groups, exceptional cases referral from schools; Rolling enrolments; Individually tailored approach to meet diverse student needs; Validation of individual progress, even if VCAL progress is slow; Multiple sites facilitates access for more diverse groups and transfer between sites to better meet specific needs and development stages; Long-term commitment – over years.
Curriculum	Young people enrolled in 1 of 3 levels of Victorian Certificate of Education (VCAL) – Foundation, Intermediate, Senior; VET certification offered – largely creative subjects, different foci at each site.
Environment-resourcing	MCM is an RTO; Education co-located with various youth services – extends range of professional expertise available to support young people; Teacher & youth worker at each site, plus teacher & youth worker as leadership across sites; Staff-student ratio – 1:2 – 1:14.
Relationships-collaboration	Family atmosphere, accepting & caring culture, stability of support, support during crisis; Strong collaboration between staff pairs with holistic focus; Weekly staff meetings for collaboration, administration, professional learning;

	Strong relationships with traditional schools.
Transition-planning	Pathways component of program – support for aspirations and planning, personal goal setting; No systematic transition program or follow-up.

ReDY Program (J. K. Thomas, 2016)

This study focussed on young people attending a single alternative education program situated on the site of a traditional (host) school.

Element	All participants
Principles	Host school: Catholic, co-educational; Third tier tertiary intervention to re-engage young people who hadn't responded to other interventions.
Practices-pedagogy	Individual, goal based, choice based; Young people enrolled after one-on-one meeting with pastoral care team; Academic needs reviewed on entry so literacy & numeracy needs could be addressed at appropriate level; Young people collected from home/meeting place in morning & returned in afternoon; Flexible timetable; Approximate enrolment in program: 12 months, when student deemed goals had been met, when student perceived they had confidence to depart.
Curriculum	Daily literacy & numeracy, physical activity, practical/specialised subjects; Structured on the Australian Curriculum, with general capabilities addressed through selected activities; Project-based learning around themes.
Environment-resourcing	Housed in independent educational building, with separate entrance on host school campus; Surrounded by gardens catered & cared for by young people; Large, open, light-filled, multiple-use space with electronic whiteboards, computer stations, recreational & relaxation facilities, kitchen & dining spaces, student artwork and design; Staff: 5 total; 3 active at any time; Young people 8-12.
Relationships-collaboration	Young people prepared meals, staff & young people ate together; Behaviour management approach – non-directive intervention, using private consultations, reflection, choices and counselling. Close collaboration with host school.
Transition-planning	When student ready to transition to traditional, curriculum content integrated into learning; Transition program commenced 10 weeks prior to leaving program.

Findings

At-risk adolescents: Commonalities on entry to alternative education

> *Research question 1: What common personal experiences, academic experiences, and academic skills are demonstrated by complex need adolescents on entry to alternative education programs?*
>
> See Table 3.

In terms of *demographics*, the five included studies involved participants with the following characteristics:

- Generally, an *age range* of 11-18 years, which equates to the secondary school age range.
- A higher proportion of *males* than *females*, with female participation rates (when reported) being substantial (33-50%).
- Representation of different *ethnicities* being variable depending on program location, with relatively limited representation of young people of Indigenous and minority ethnicities overall.
- A high representation of young people of low *socio-economic status* background.
- Limited representation of young people from rural and remote *regional backgrounds* and, conversely, high representation of young people from metropolitan backgrounds.

Four studies reported data relating to the *personal and/or social experiences* of young people on entry to an alternative education program. This data was, however, quite limited, revealing that young people engaged in alternative education programs may:

- Be more likely to live in a single-parent household (60%; J. K. Thomas, 2016);
- Reside in out of home care and/or have experienced abuse or neglect (Kendall et al., 2003);
- Be more likely to have demonstrated antisocial and/or criminal behaviour (72%; Kendall et al., 2003).
- Demonstrate below average cognitive function (Alfassi, 2003), have a physical, psychological or learning disorder (Kendall et al., 2003), or self-report an existing disability or illness (28%; Te Riele et al., 2015).

Five studies reported data relating to the *academic experiences* of young people on entry to an alternative education program. As with data relating to personal and/or social experiences, this was limited, revealing:

- High rates of educational disengagement (Alfassi, 2003), poor school attendance and/or long periods of non-enrolment in school (Kendall et al., 2003);
- Young people not responding to engagement strategies implemented in traditional education setting (J. K. Thomas, 2016);
- High rates of permanent exclusion, or risk of permanent exclusion from school (Kendall et al., 2003);
- High rates of special educational needs (Kendall et al., 2003) and/or classification of educational risk (Nibbelink, 2011);
- Discrepancies between chronological age and level of schooling completed (Te Riele et al., 2015).

Three studies reported data relating to the academic skills of young people on entry to an alternative education program. This data was extremely limited and not clearly reported, but indicated that on entry to alternative education young people may demonstrate:

- Scores below proficiency on jurisdictional standardised assessments (Nibbelink, 2011);
- Lack of appropriate skills to enrol in course levels targeted at their chronological age (Te Riele et al., 2015);
- Below average/expected achievement on standardised literacy and numeracy assessments, as well as across school subjects (J. K. Thomas, 2016).

Table 3. *At-risk adolescents on entry to alternative education, based on data from included studies*

Study	Demographics	Personal/social experiences	Academic experiences	Academic skills
(Alfassi, 2003) *n* = 52 Israel	A: 14-17 G: mixed E: - S: largely low R: urban	Cognitive function below average (Standard Progressive Matrices *M* = 34.98)	100% disengaged from traditional education	-
(Kendall et al., 2003) *n* = 162 UK	A: 11-16 G: 33% female E: 94% Caucasian UK S: - R: -	10% out of home care 4% domestic/other abuse/neglect 34-72% antisocial behaviour 13% physical/psychological/learning disorder	41% permanent exclusion/high risk for 71% poor-very poor attendance (*n* = 95) 60% >1 year out of school (*n* = 27) 69% special educational needs	*Authors noted lack of available data*
(Nibbelink, 2011) *n* = 507 USA	A: ~11-18 G: ~40% female E: ~80% African American S: largely low SES R: metropolitan	-	E: 100% formally identified at-risk	E: 100% frequently scored below proficiency on state standardized tests
(Te Riele et al., 2015) *n* = 98 Australia	A: 15-25+ (75% =/> 17 years) G: 50% female E: 9% Indigenous; 20% not Australian born S: 60% low SES R: metropolitan	28% self-reported disability/illness Formal diagnosis (*n* = 27): 36% mental illness; 29% medical condition; 15% intellectual impairment; 15% learning disability; 4% physical disability	41% had completed year 9/below 32% had completed year 10	15 - 16 years – Foundation enrolment > Intermediate enrolment 17 – 18 years – Intermediate enrolment > senior enrolment
(J. K. Thomas, 2016) *n* = 56 Australia	A: 12-16 G: 43% female E: 7% Indigenous S: majority low R: metropolitan	60% single-parent household	100% not responding to engagement strategies in traditional education	(*n* = 12) 32% achieving below expected year level standard (*n* = 17) overall below average standard scores on literacy & numeracy

Notes: Age: age range; G: gender; E: ethnicity; S: SES; R: regional background. Nibbelink: E – experimental group (at-risk at alternative school0

Alternative education and positive outcomes

Research question 2: Has participation in alternative education programs by complex need adolescents been demonstrated to be associated with positive outcomes in the three key domains of academic skills (general learning, literacy, numeracy), educational and vocational related personal and social skills (academic self-efficacy, socio-emotional skills) and transition to further education, training and/or employment?

See Table 4.

Data from four studies indicated mixed, but generally positive findings in relation to academic outcomes of young people following participation in alternative education programs. Specifically, data suggests that alternative education programs may be associated with:

- 26-40% of young people gaining some level or type of recognised certification;
- No significant increase or decrease in grade point average and number of failing subjects for young people (Nibbelink, 2011), and overall maintenance of subject grade levels on return to traditional education (J. K. Thomas, 2016);
- A reduction in the likelihood of at-risk young people dropping out of school (Nibbelink, 2011);
- A small but significant improvement in literacy and numeracy skills (J. K. Thomas, 2016).

Five studies provided evidence that participation in alternative education is generally associated with positive outcomes with regard personal and social skills. Studies revealed that:

- *Academic self-efficacy* seemed to consistently demonstrate improvement, specifically:
  - Self-efficacy was significantly and positively associated with academic achievement, and accounted for 13-27% of the variance in academic achievement scores (Alfassi, 2003);
  - Young people demonstrated a significant and large improvement in confidence (Kendall et al., 2003; Te Riele et al., 2015; J. K. Thomas, 2016), as well as increases in satisfaction with work (Te Riele et al., 2015) and positive attitudes towards learning (Kendall et al., 2003; J. K. Thomas, 2016).
- *Socio-emotional skills* were associated with generally positive, but some negative outcomes, specifically:
  - Changes in proportions of young people demonstrating specific behaviours and/skills suggested that:
    - Positive outcomes included a reduction in young people receiving fixed term exclusions and engaging in offending (Kendall et al., 2003), an increase in young people demonstrating acceptable levels of class participation and resilience (Te Riele et al., 2015);

Table 4. *Outcomes following participation in an alternative education program, based on data from included studies*

Study	Academic skills			Psycho-social skills		Transition
	General	Literacy	Numeracy	Academic self-efficacy	Socio-emotional skills	
(Alfassi, 2003) $n = 52$ Israel	-	E group significantly higher scores than C group on: language arts, Cohen's $d = {\sim}2.98^*$; standardized reading, Cohen's $d = 1.88^*$	E group significantly higher scores than C group on maths Cohen's $d = {\sim}3.94^*$	E group significantly higher scores than C group, Cohen's $d = 2.27^*$-2.69^* Significant positive correlations between self-efficacy & achievement scores Self-efficacy accounted for 13-27% of variance in achievement scores	-	-
(Kendall et al., 2003) $n = 162$ UK	40% education qualification 27% VET certificate 39% personal-social certificate	-	-	($n = 38$) 50% expressed increased interest in learning ($n = 57$) overall improvement in attitudes towards learning ($n = 27$) 26% expressed increased confidence	Overall attendance up slightly 68% to 71% Fixed term exclusions down ~38% to 9% Proportion young people: offending down 35% to 29%; classed as persistent offender up 2.5% to 5%	($n = 94$) 24% employment 45% further education/training 11% traditional education 43% remain in program
(Nibbelink, 2011) $n = 507$ USA	Change in GPA: $C_2 > E > C_1$; C_2 increase, E no sig. change, C_1 decrease Change in failing grades: $C_2 > E > C_1$; C_2 decrease, E no sig. change, C_1 increase Dropout status: $C_2 > E > C_1$; Compared to C_2, E – 9x, C_1 – 21x more likely to drop out	-	-	-	Change in attendance: $C_2 > E > C_1$; C_2 increase, E decrease, C_1 greater decrease Change in tardiness: $C_2 > C_1 > E$; C_2 decrease, C_1 increase, E greater increase Change in discipline referrals: $C_2 > C_1 > E$; C_2 no significant change, C_1 increase, E greater increase Change in suspensions: $C_2 > E > C_1$; C_2 no significant change, E increase, C_1 greater increase	-
(Te Riele et al., 2015) $n = 98$ Australia	($n = 88$) VCAL: 26% completed full certificate, 39% completed part certificate Non-completion higher at Foundation & Intermediate levels	-	-	($n = 41$) Proportion of young people: Satisfied in own work - increased from 59% to 78%; Confident increased from 54% to 85%	($n = 41$) Proportion of young people: Showing acceptable levels of class participation increased from 59% to 78%; Demonstrating resilience increased from 41% to 68%	-
(J. K. Thomas, 2016) $n = 56$ Australia	Report card grades (combined across subjects; $n = 12$): Grades A, B, C: 68% pre- to 63% post-program Grades D, E: 32% pre- to 36% post-program	($n = 17$) Significant improvement between pre- & post-program Cohen's $d = .32^*$	($n = 17$) Significant improvement between pre- & post-program Cohen's $d = .39^*$	($n = 9 - 31$) Overall significant improvement pre- to post-program Cohen's $d = 1.81^* - 3.65^*$ Overall decrease in negative & increase in positive indicators pre- to post-program	($n = 6 - 53$) Overall significant improvement pre- to post-program Cohen's $d = 0.34^* – 3.98^*$ Overall decrease in negative & increase in positive indicators pre- to post-program	74% traditional education 7% employment/training FU TE F E/T E 1 70% 5% 15% 2 66% 20% 26% 3 20% 20% 50%

Notes: [*] Effect sizes calculated in review process. Alfassi: E – experimental group (alternative learner centred model), C – control group (alternative traditional model). Kendall et al.: VET – vocational education & training. Nibbelink: E: experimental group (at-risk in alternative program), C1 – comparison (at-risk in traditional education), C2 – control (not at-risk in traditional education). Te Riele et al.: VCAL – Victorian Certificate of Applied Learning. Thomas: FU – follow-up; Years – 1 ($n = 20$), 2 ($n = 15$), 3 ($n = 10$); TE – traditional education, F E/T – further education/training, E – employment.

- Potentially negative outcomes included an increase in young people classified as persistent offenders (Kendall et al., 2003), as well as an increase in suspensions and tardiness and decrease in attendance (Nibbelink, 2011).
- Multi-informant pre- and post- measures of various socio-emotional skills revealed significant, small to large improvements in young people's capacity to manage their anger and anxiety, maintain positive relationships within school and engage in school (J. K. Thomas, 2016).

Two studies provided data and analysis relating to *transition* of young people who had participated in alternative education programs to further education, training or employment. Evidence from these studies was impacted by limited participation and/or information at initial reporting and follow-up. The available data indicated that young people demonstrate:

- Initial engagement in return to traditional education of 11-74% and further education/training and employment of 7-45% (Kendall et al., 2003; J. K. Thomas, 2016);
- Ongoing engagement after three years in some form of education/training of 20% and employment of 50% (J. K. Thomas, 2016).

The broader literature suggests that:

- Participation in alternative education programs has a small but significant effect on academic outcomes for at-risk adolescents (Pronk, Kuiper, et al., 2020).
- Alternative education provision is associated with improvements on standardised assessments and GPA in English and Mathematics (Aron, 2006; Dalessio, 2012; Quinn & Poirier, 2007).
- A specific alternative education program evaluated through strict evidence criteria demonstrated no effect on completing school, mixed effects on staying in school, but potentially positive effects on academic progression (What Works Clearinghouse, 2007).
- Strong relationships exist between factors such as improved confidence, motivation and outlook and attainment of formal academic outcomes (Myconos, 2014).
- Participation in alternative education programs has been demonstrated to be associated with increases in factors relating to academic self-efficacy (Nichols & Utesch, 1998).
- Participation in alternative education programs has a small but significant effect on socio-emotional outcomes for at risk-adolescents (Polidano, Tabasso, & Tseng, 2012b; Pronk, Kuiper, et al., 2020).
- Generally, alternative education programs are associated with improved patterns of attendance, engagement and behaviour (Thomson, 2014).
- Following participation in alternative education, young people may have multiple destinations, either concurrent or sequential (Te Riele, Wilson, Wallace, McGinty, & Lewthwaite, 2017)
- Alternative education has been found to be associated with high rates of engagement in further education and employment, if associated with comprehensive reintegration strategies (Bendicsen, 2018; Thomson, 2014).
- In Australia, career planning has been linked to re-engagement in educational opportunities for early school leavers (Polidano, Tabasso, & Tseng, 2012a; Shay & Heck, 2015; Thomson & Pennacchia, 2014).

Elements of alternative education that influence positive outcomes

Research question 3a: Do complex need adolescents demonstrate better outcomes in each key domain through participation in an alternative education program compared to participation in education within tradition school settings?

One study included a control group enrolled in traditional education (Nibbelink, 2011). Results from this study revealed that at-risk young people participating in an alternative education program demonstrated:

- Better performance than at-risk young people in traditional education in terms of increase in GPA, decrease in failing grades and decrease in rate of school drop-out;
- Better performance than at-risk young people in traditional education in terms of attendance and suspensions;
- Poorer performance than both average young people and at-risk young people in traditional education in terms of tardiness and discipline referrals (author note: could be linked to school/class size variables; Nibbelink, 2011).

One study (Alfassi, 2003) included assessment and analysis that could inform how different elements of alternative education might be linked to specific outcomes. Results from this study revealed that compared to disengaged young people participating in an alternative program using a conventional academic pedagogy, disengaged young people participating in an alternative program with a learner centred structured academic pedagogy demonstrated:

- Significantly higher scores on language arts, maths and standardized reading assessments;
- Significantly higher scores on a self-efficacy assessment.

The broader literature suggests that:

- Compared to young people in traditional education settings, those in alternative education settings may:
  - Earn more academic credits in a semester (Wilkerson, Afacan, Yan, Justin, & Datar, 2015) or over time (Franklin, Streeter, Kim, & Tripodi, 2007);
  - Perform better on standardized assessments of certain subjects, but not across all subjects (Skelton, 2017; Thomson & Pennacchia, 2014);
  - Demonstrate better academic outcomes through online education tools (Krosner, 2016).
- Compared to at-risk young people in traditional education, those in alternative education settings may demonstrate:
  - A higher GPA (Moger, 2010) and/or greater improvements in GPA (Bendicsen, 2018);
  - Higher graduation rates (Bendicsen, 2018).
- In relation to personal and social outcomes, a young person in alternative education may demonstrate:
  - Lower attendance rates than the average young person in traditional education (Wilkerson et al., 2015), but higher and improving attendance rates than an at-risk young person in traditional education (Bendicsen, 2018);
  - Higher incidence of suspensions than the average young person in traditional education (Wilkerson et al., 2015);
  - Fewer office disciplinary referrals than the average young person or at-risk young person in traditional education (Bendicsen, 2018; Wilkerson et al., 2015).
- Longer duration in an alternative education program may be associated with reduced effectiveness (Pronk, Kuiper, et al., 2020), as well as decline in academic self-efficacy, following an initial increase (Brown, 2019).
- Greater sense of involvement and belonging in the school environment may be associated with higher academic achievement (Edgar-Smith & Palmer, 2015), as well as higher levels of academic self-efficacy (Brown, 2019).
- Alternative education provision that incorporates flexible scheduling and effective pedagogy may have positive impacts on academic self-efficacy (Brown, 2019)
- Key elements of alternative education programs thought to be associated with positive change include:
  - Programs characterised by clearly articulated principles (Bendicsen, 2018; Myconos, 2014; Te Riele, 2014), flexible attendance and timetabling options (Gutherson et al., 2011), and systematic, ongoing assessment of inputs and outcomes (Gutherson et al., 2011; Thomson & Pennacchia, 2014);
  - Flexible and innovative curriculum, including tailored and individualised program elements (Gutherson et al., 2011; Mills & McGregor, 2016; Te Riele, 2014; Thomson & Pennacchia, 2014), practically-oriented, skills-based, purposeful, relevant learning opportunities (Gutherson et al., 2011; Te Riele, 2014; Thomson & Pennacchia, 2014; Wilkerson et al., 2015), and development of personal & social skills (McGee & Lin, 2017);
  - Person-centred pedagogy, focussing on capabilities, providing opportunities for genuine student input and choice (Gutherson et al., 2011; Malloy, Sundar, Hagner, Pierias, & Viet, 2010; Mills & McGregor, 2016; Moger, 2010; Te Riele, 2014; Thomson & Pennacchia, 2014), and measuring outcomes in terms of individual progression (J. Thomas, McGinty, te Riele, & Wilson, 2017);
  - An environment of stability, safety and comfort (Te Riele, 2014; Thomson & Pennacchia, 2014) with strong, respectful, trusting and supportive relationships (Gutherson et al., 2011; Shay & Heck, 2015; Te Riele, 2014; Thomson & Pennacchia, 2014) and offering ongoing support (Gutherson et al., 2011; Thomson, 2014);
  - Staffing levels that facilitate one-to-one attention and learning support (Gutherson et al., 2011; Pronk, Kuiper, et al., 2020; Te Riele, 2014; Te Riele et al., 2015), and include multi-disciplinary and specialist staff (Gutherson et al., 2011; Te Riele, 2014; Thomson & Pennacchia, 2014) who are involved in ongoing, quality professional learning (Plows, 2017);
  - Collaboration and partnerships with family and community (Gutherson et al., 2011; McGee & Lin, 2017; Pronk, Kuiper, et al., 2020; Shay & Heck, 2015; Te Riele, 2014; Te Riele et al., 2017; Thomson, 2014).

Positive impacts of alternative education for different cohorts of adolescents

Research question 4a: Following participation in alternative education programs, do specific cohorts of complex need adolescents demonstrate greater improvements in each key domain?

None of the studies provided data or analysis which could inform queries regarding whether specific cohorts of at-risk adolescents demonstrate better outcomes after participation in alternative education.

Research question 4b: Are elements of alternative education programs for complex need adolescents differently associated with improvements in each key domain dependent on membership of specific cohorts?

None of the studies provided data or analysis which could inform which elements of alternative education programs are associated with better outcomes for specific cohorts of at-risk adolescents.

The broader literature suggests that:

- Young people with psycho-emotional vulnerability and minor behaviour problems may have better outcomes for alternative education than those with severe antisocial behaviours and non-supportive families (Kendall et al., 2003).
- Younger age at commencement, a disruptive behaviour disorder diagnosis and living in a single-parent family have been shown to be associated with unsuccessful alternative education program completion. In contrast, gender, ethnicity, adverse childhood experiences, level of cognitive functioning, criminal involvement and previous educational setting were among the factors not found to be associated with successful/unsuccessful program completion (Pronk, Mulder, et al., 2020).

Quality of Evidence Base

The following discussion considers the quality of evidence generally, based on evaluation guidelines (Child Care and Early Education Research Connections, 2020; Coalition for Evidence-Based Policy, 2003; What Works Clearinghouse, 2020), as well as specifically, in terms of informing alternative education provision in Queensland and by Vocational Training Queensland. A summary of strengths and weaknesses of each study is listed in Table 5.

Aspects of the population

- None of the studies employed random selection or assignment, and most studies included a selective subgroup of the population of interest (i.e. all young people in alternative education programs within a jurisdiction).
- Participant numbers varied greatly between studies, with two studies having relatively low numbers, and at least two studies being impacted by attrition or inconsistent participation across all measures.
- The age-range of participants is consistent with the secondary school age range in Queensland. The exception was Te Riele et al.'s study (2015) which included young adults, but did not report outcomes by sub-group to allow exclusion of this sub-sample during review.
- Both females and males were generally well represented in the studies.
- Only two studies involved Australian participants, and these two studies included relatively small proportions of Indigenous young people.
- Where regional background was reported, the studies exclusively reported on participants from urban or metropolitan backgrounds.

Aspects of intervention program

- In most cases, with the exception of Nibbelink's study (2011), alternative education programs were well described and included elements that are relevant to Queensland and VTQ.
- In two studies (Kendall et al., 2003; Te Riele et al., 2015) elements of alternative education provision were inconsistent across sites, which may have impacted findings.
- The funding and resourcing model of the program in Thomas' study (2016) is probably not typical of that found in many settings in Queensland.

Study design and implementation

- Three studies could be considered longitudinal, one used an ex-post facto design and one was cross-sectional.
- Only two studies employed comparison and/or control groups, but one study employed a comparison group in which some participants had the option of participating in the program but declined (Nibbelink, 2011).
- Pre- and post-program measurement was conducted in three studies, with one study conducting follow-up for three years (J. K. Thomas, 2016), but at least two studies reported inconsistent response rates across time and measures, and strategies for reporting missing data were not always clear.
- Only two studies used sophisticated statistical techniques to analyse data, and only one statistically controlled for demographic variables (Nibbelink, 2011). Generally, variables that could have potentially confounded associations between alternative education programs and various outcomes were not accounted for or analysed.

Quality of measures and reporting

- All studies utilised at least some form of standardised, jurisdictionally consistent and/or valid and reliable outcome measures for academic outcomes (notably, this was an inclusion criteria for the review). However, few studies adequately described the measures to allow for ease of interpretation of outcomes and/or relevance to the Queensland setting.

- Two studies (Alfassi, 2003; Te Riele et al., 2015) utilised a valid and reliable measure of variables relating to academic self-efficacy and only one study (Te Riele et al., 2015) utilised a valid and reliable measure of socio-emotional skills. However, Thomas' (2016) use of multi-informant, multi-timepoint data does represent a more sophisticated technique.
- Only two studies reported adequate information to allow calculation of effect sizes (Alfassi, 2003; J. K. Thomas, 2016), at least two studies provided incomplete data for some or all outcome measures and at least three studies did not separately analyse missing cases.
- Only one study (Alfassi, 2003) was published in a peer reviewed journal. However, the three studies that were reported in doctoral theses must have been examined by at least two academic peers.

The broader literature suggests that:

- There is little rigorous evaluation research documenting the effectiveness of alternative education programmes that can link specific programme characteristics with specific student outcomes (Gutherson, Davies, & Daszkiewicz, 2011)
- Insufficient data on program elements in published studies has resulted in difficulty testing these as moderators in meta-analyses (Pronk, Kuiper, et al., 2020).
- There are very few large-scale systematic studies on the outcomes relating to different cohorts of young people who participate in alternative education (Aron, 2006; Thomson, 2014).
- Gaps in research relating to alternative education are suggested to include (Mills & McGregor, 2016; Thomson & Pennacchia, 2014):
  - Longitudinal studies;
  - Models, frameworks and mechanisms for identifying and assessing outcomes (especially educational outcomes);
  - Comprehensive assessment of multiple program outcomes across a range of domains.
- Evidence arising from studies into alternative education generally does not meet recognised standards/criteria relating to evidence based practice in education (Schwab, Johnson, Ansley, Houchins, & Varjas, 2016).
- Study and measure quality has been demonstrated to have a significant impact on reported outcomes, with qualitatively weaker studies and less reliable measures showing larger effect sizes (Pronk, Kuiper, et al., 2020).
- Contextual challenges for research and evidence-based practice in alternative education are considered to be significant (Te Riele, Davies, Baker, & Swain, 2015; Thomson & Pennacchia, 2014)
  - Progress in programs is intertwined with complex challenges experienced by individual young people prior to, during and after participation in alternative education;
  - Alternative education programs often operate with relatively low resources.

Table 5. *Evaluation of evidence base to inform alternative education provision in Queensland generally and for VTQ specifically*

Study	Aspects of population/participants	Aspects of intervention	Study design & implementation	Quality of measures & reporting
(Alfassi, 2003) *n* = 52 Israel	+>1 sub-group + full participation - Small sample size - Non-random, selective sub-group - Ethnicity & regional background not clear	+ Detailed overview of program principles & characteristics; difference between intervention for groups explained	+ Comparison of alternative school pedagogies + Control group + Appropriate, sophisticated statistical techniques - Cross sectional design; no pre-/post-program assessment - Limited focus - Potential confounds not accounted for	+ Standardized measure – reading; high internal consistency & independent raters - math & language skills; valid, reliable measure - self-efficacy + Adequate data to calculate effect sizes + Published & peer reviewed - Incomplete data reporting some measures
(Kendall et al., 2003) *n* = 162 UK	+ Range of sub-groups - Non-random selection - Attrition/inconsistent participation - No Indigenous and/or remote participants	+ Overview of common program characteristics, curriculum, pedagogy, & resourcing, and summary for each program - Elements of programs inconsistent across sub-groups	+ Longitudinal; some pre-/post-program assessment - No comparison group - Variable data reporting by sub-group; no analyses sub-group differences - Limited statistical analyses - Potential confounds not accounted for	+ Nationally recognised academic accreditation - Socio-emotional outcomes not based on reliable, valid measure - Missing cases not separately analysed - Not published or peer reviewed NB: additional cost-benefit analyses
(Nibbelink, 2011) *n* = 507 USA	+ Large sample size - Non-random, selective sub-group - No Indigenous and/or remote participants	- Very limited information regarding alternative education program	+ Longitudinal; pre-/post-program assessment + Comparison & control group + Based on change/growth model + Sophisticated statistical techniques, statistical control for demographic variables - Comparison group made up of some individuals who declined participation in intervention	+ Use of official school data - Socio-emotional outcomes not based on specifically-designed, reliable, valid measure - Incomplete data reporting (e.g., *M, SD* pre- & post-intervention scores) - Not published
(Te Riele et al., 2015) *n* = 98 Australia	+ Australian population + >1 sub-group - Non-random - Few Indigenous and/or remote participants	+ Detailed overview of program principles & characteristics - Elements of programs inconsistent across sub-groups	- Ex post-factor; no pre-/post-program assessment - No comparison group - No analyses sub-group differences - Potential confounds not accounted for	+ Use of recognised certificate for academic outcomes; valid, reliable measure for engagement - Incomplete data reporting - Missing cases not separately analysed - Not published or peer reviewed
(J. K. Thomas, 2016) *n* = 56 Australia	+ Australian population - Small sample size - Non-random, selective sub-group - Attrition/inconsistent participation - Few Indigenous and/or remote participants	+ Detailed overview of program principles & characteristics - Funding/resourcing probably atypical	+ Longitudinal; pre-/post-program assessment; follow up to 3 years + Use of multi-dimensional framework - No comparison group - Limited use of advanced statistical techniques - Missing cases not separately analysed	+ Multi-informant, multi-timepoint measurement/reporting + Standardised literacy & numeracy measures + Adequate data to calculate effect sizes - Full details of measures not reported - Missing cases not separately analysed - Not published

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Appendices

Appendix A: Additional studies

Table A1: Additional studies with potential to inform alternative education provision and evaluation by VTQ

Study	Reason for recommendation	Reason for non-inclusion in current review
Australia		
Lessons from a flexible learning program: The Brotherhood of St Laurence Community VCAL education program for young people 2010-2013. (Myconos, 2014)* Organisational report	• Offers a summative assessment of an alternative education approach in Australia • Outlines development and consolidation process with an alternative education setting	• Inclusion criteria re. personal and social outcome measures not met • Limited outcome data
A second chance at education for early school leavers (Polidano et al., 2012a)* Discussion paper	• Focus is on factors related to transition (re-engagement if education) • Uses data from the Longitudinal Survey of Australian Youth • Examines influence of time disengaged from school, career planning and academic skill development on educational re-engagement • Utilizes advanced statistical techniques	• Not an evaluation of alternative education provision • Inclusion criteria re. academic and personal and social outcome measures not met
Europe		
Differences between adolescents who do and do not successfully complete their program within a non-residential alternative education facility (Pronk, Mulder, et al., 2020) Paper in peer-reviewed journal	• High quality study design, methods & reporting • Evaluates a wide range of personal & social factors with potential to influence successful alternative education outcomes • One of very few studies to investigate outcomes for different cohorts in alternative education	• Inclusion criteria re. academic and personal and social outcome measures not met
United States		
Understanding alternative education student self-efficacy related to experiential and organizational factors. (Brown, 2019)* Doctoral thesis	• Investigates elements of alternative education provision associated with academic self-efficacy • Highlights the potential for teacher involvement in research to enhance pedagogy	• Inclusion criteria re. academic and personal and social outcome measures not met
Effectiveness of blended learning in a rural alternative education school setting (Skelton, 2017) Doctoral thesis	• Evaluates academic outcomes • Compares pedagogical strategies (including online delivery) between traditional and alternative school settings • Participants include a high proportion of ethnic minority young people in a rural area	• Inclusion criteria re. personal and social outcome measures not met
The relationship between the APEX program for instruction and high school student academic success (Krosner, 2016) Doctoral thesis	• Focus is on online education delivery • Evaluates specific program across 3 groups – alternative setting, traditional setting, no program traditional setting • Range of academic data reported • Academic growth/change reported	• Inclusion criteria re. personal and social outcome measures not met
Study of effective alternative education programs: Final grant report (Quinn & Poirier, 2007) Funded project report	• Utilizes rigorous, independently designed measures • Evaluates programs in relation to implementation of evidence-based practices specific to at-risk adolescents	• Inclusion criteria re. academic and personal and social outcome measures not met

Notes: arranged by country of focus in order of recency of publication/production. *Did not appear in review searches.

Appendix B: Recent Reviews

Table A2:   Reviews with potential to inform alternative education provision and evaluation by VTQ

Review Details	Brief outline
International	
A meta-analysis on the outcomes of adolescents at risk for school drop-out attending non-residential alternative educational facilities (Pronk, Kuiper, et al., 2020)* Paper in peer reviewed journal	Article examining 10 studies with data relating to outcomes for at-risk adolescents participating in alternative education programs, with findings indicating: • A small but significant overall effect of alternative education on at-risk student outcomes; • No difference in effect between outcome domains, indicating a generic effect of alternative education on at-risk student outcomes; • Moderated effect of some study characteristics moderated the overall effect, with qualitatively weaker studies, less reliable measures and self-report associated with larger effect sizes.

Achieving successful outcomes through alternative education provision: An international literature review. (Gutherson et al., 2011)* Commissioned report	Report reviewing 119 documents (98 in full; 21 in part) to explore essential characteristics of effective alternative education practice, to reveal that:
	• Rigorous evaluation research documenting the effectiveness of alternative education programmes that can link specific programme characteristics with specific student outcomes is limited;
	• Features or characteristics thought, in the research, to be essential to the success of alternative education efforts:
	    • Are characteristics or components of effective education, wherever it takes place;
	    • Lack a strong evidence base to support claims of effectiveness;
	    • Lack a strong evidence base as to how these characteristics or components contribute to effective affective alternative education improvement.

Australia	
Outcomes from flexible learning options for disenfranchised youth: What counts? (Te Riele et al., 2017) Paper in peer reviewed journal	Article examining 20 reports relating to flexible learning options (FLO) in Australia to ascertain the: • Outcomes that are the focus of FLO reports; • Outcome categories that are prominent in FLO reports; • Evaluation & research methodologies common in FLO reports.
Engaging students in engaging schools: Lessons from Queensland's alternative education sector (Mills & McGregor, 2016)* Funded project report	Report from an ARC funded project using interviews, surveys and case studies to: • Determine principles necessary to cater to the needs of youth who have become disengaged from traditional schooling; • Explore & assess the effectiveness of alternative education pathways available for disengaged youth in Queensland; • Develop recommendations to improve alternative education pathways for marginalised youth in Queensland.
Putting the jigsaw together: Flexible learning programs in Australia. Final report (Te Riele, 2014) Research report	Report on a research project which utilised a tiered analysis of flexible learning programs (FLP) in Australia to examine: • Access to FLP across Australia; • The diversity of FLPs available in Australia; • Outcomes associated with promising practices in FLPs in Australia.
United Kingdom	
What's the alternative? Literature review of alternative education provision (Thomson, 2014)* Effective support for young people disengaging from traditional education (Thomson & Pennacchia, 2014)* Commissioned report	Literature review and report for a research project using review of the international literature, case studies and consultations to investigate: • Quality in alternative education in the UK; • How alternative education differs to traditional education; • How alternative education provided additional opportunities to young people.

Notes: arranged by country of focus in order of recency of publication/production; *Did not appear in review searches.

Appendix C: Models and Frameworks

Table A3: Articles and reports examining models and frameworks with potential to inform alternative education provision and evaluation by VTQ

Article Details	Brief outline
Australia	
Alternative education engaging Indigenous young people: Flexi schooling in Queensland (Shay & Heck, 2015) Paper in peer reviewed journal	Discusses findings from a qualitative research project exploring connections between alternative education and Indigenous learners in Queensland, and reveals/suggests that: • A high number of Indigenous young people are participating in alternative education; • A high number of Indigenous staff members are working in multiple roles within alternative education; • Alternative education is playing a significant role in supporting Indigenous young people to remain engaged in education; • Further research is needed to assist in understanding elements of alternative provision that are specifically associated with positive outcomes for Indigenous young people.
Educational alternatives for marginalised youth (Te Riele, 2007) Paper in peer reviewed journal	Provides a map of the alternative education landscape for marginalised youth in New South Wales, in order to : • Reduce confusion & enable communication between programs, practitioners and scholars, locally and internationally; • Focus on dimensions of program's purpose in relation to locus of change & stability of the program.
Canada	
Evaluating programs for at-risk adolescents: Toward an outcome-based assessment framework (Sloat, Audas, & Willms, 2007) Paper in peer reviewed journal	Presents an outcome-based model for evaluating school and community programs serving at-risk adolescents, and reports: • Cost-effective techniques for comparing the progress of youth receiving an intervention with youth in a pseudo-control group; • The outcomes considered most important for success for at-risk youth in alternative education programs; • Reliability and validity of instruments used, strengths, limitations, and implications of the approach for further research.
United States	
Providing a supportive alternative education environment for at-risk students (McGee & Lin, 2017) Paper in peer reviewed journal	Discusses the challenges of quantifying & describing alternative education, including: • Vastly different interpretations held by educational agencies regarding alternative education program components and operations • The absence of a consistent national protocol as to what components or criteria define an effective alternative education Introduces a research-based multidimensional framework aimed at building an operational alternative education program model.
Towards a typology of alternative education programs (Aron, 2003) Report	Presents a review & examination of alternative education, including: • How alternative education has been defined and described; • Dimensions along which alternative education models/programs have been developed; • Typologies that have been developed; • Characteristics shared by promising alternative education programs.

Notes: arranged by country of focus in order of recency of publication/production.