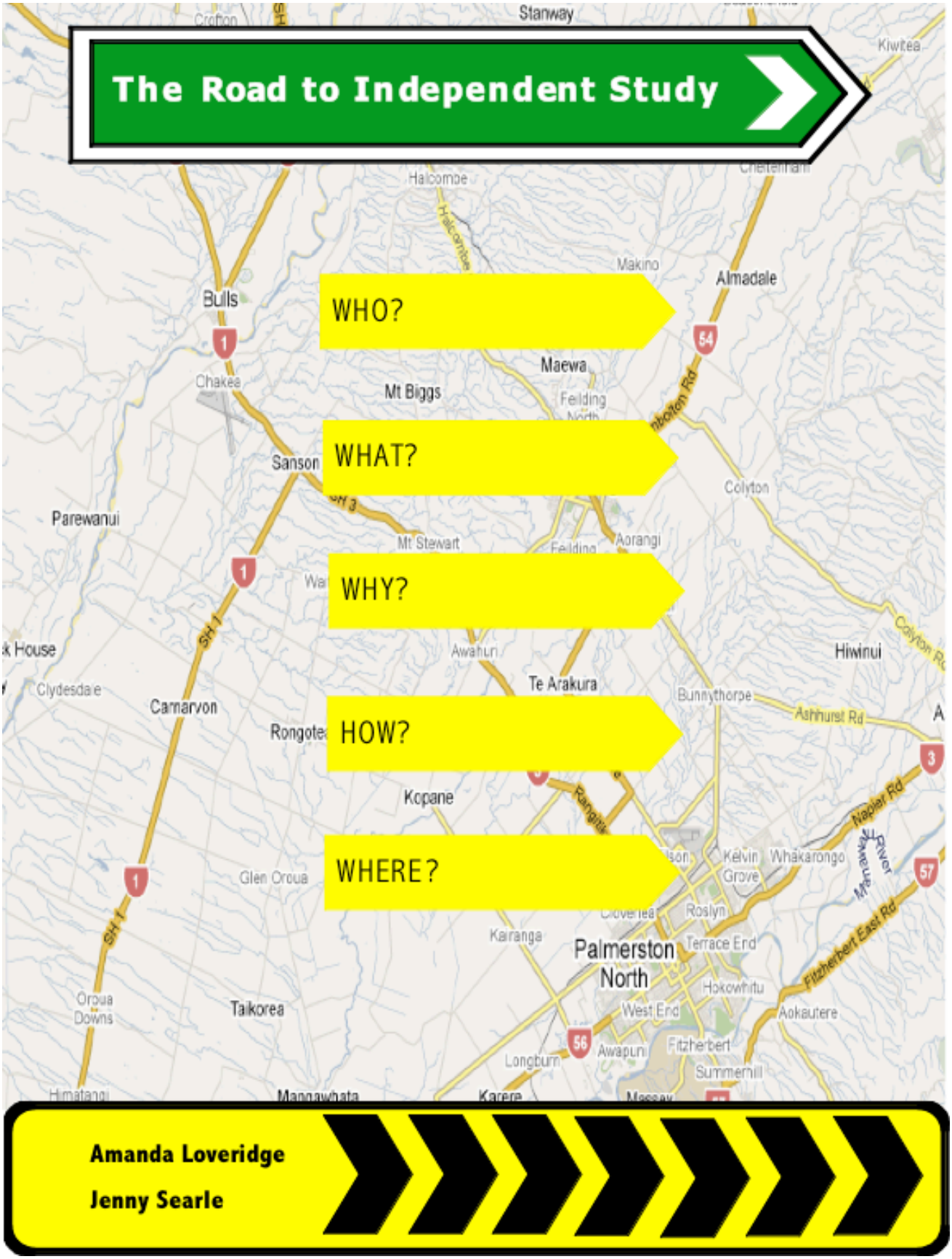
The Road to Independent Study



Amanda Loveridge

Jenny Searle

TOURIST INFORMATION

Amanda Loveridge

and

Jenny Searle

Massey University College of Education

2009

Special thanks to Tracy Riley for her guidance and support.

Many sections of this booklet are accompanied by detours. These are designed to direct the reader to sources of information that elaborate on the points made in this booklet.

Introduction

In New Zealand, gifted and talented students spend the majority of their school time in mainstream classrooms with their same age peers (Ministry of Education, 2000; Moltzen, 2004b). Thus schools have more commonly preferred classroom based provisions than school based or community provisions (Riley, Bevan-Brown, Bicknell, Carroll-Lind, & Kearney, 2004a). Consequently, all teachers have a responsibility to provide qualitatively differentiated programmes to meet the needs, interests and abilities of gifted students in their classrooms to assist them in reaching their full potential (Education Review Office, 1998). Secondary schools have favoured in-class enrichment and acceleration as a means of providing for the needs of gifted and talented students (Moltzen, 2004b). Research by Riley et al. (2004b) found Independent Study was a commonly reported classroom based strategy in New Zealand Schools. Independent Study is an accepted and ideal strategy for the secondary school context (Delisle & Lewis, 2003; Gallagher & Gallagher, 1994; Powers, 2008).

This booklet is intended for secondary school teachers. It advocates independent study "as a viable differentiation technique for gifted learners" in the regular secondary school classroom, both in junior and senior programmes (Powers, 2008, p. 57). It discusses qualitative differentiation, defines and describes the rationale and process of independent study and provides links to additional resources.

The New Zealand Context

The inclusion of gifted and talented students in the National Administration Guideline 1(iii)c (NAG) made it mandatory in 2005 for all schools to implement provisions for gifted and talented students to ensure all students' needs are met (Education Review Office, 2008). The Education Review Office (2008) recommended appropriate teaching and learning strategies that challenge and differentiate mainstream class programmes.

The New Zealand Curriculum provides teachers with the flexibility to modify instruction and learning activities to meet individual student needs (Ministry of Education, 2000). It aims to foster "confident, connected, actively involved, life-long learners" (Ministry of Education, 2007, p. 7). Independent study is aligned with the aims of the curriculum as it places students at the centre of the teaching and learning process; develops thinking and problem solving skills, initiative and the skills required to foster independent learners; and promotes excellence, innovation, inquiry and curiosity (Ministry of Education, 2007).

The National Certificate of Educational Achievement (NCEA) provides teachers with flexibility to design challenging learning experiences and assessments that are matched to students' interests (New Zealand Qualifications Authority, 2001). It encourages a variety of learning and assessment opportunities using a range of products as evidence of learning (http://www.nzqa.govt.nz/ncea). Thus, independent study is an effective and acceptable strategy to use within an NCEA programme.

Qualitative Differentiation

A one-size-fits-all approach to provisions for gifted and talented is inappropriate as students require teaching and learning experiences where content, process and products are modified in response to their readiness, interests and learning preferences (Riley, et al., 2004a; Tomlinson, 2001). Qualitative differentiation aims to personalise and individualise instruction to match the needs of individual students to ensure they are challenged and reach their full potential (Riley, 2004). Thus, they may study the same concepts and units as their peers but at a more sophisticated and complex level (Winebrenner, 2001).

Content What is taught or learnt.
Process How the content is taught or learnt.
Product The evidence of learning.
(Ministry of Education, 2000)

Readiness The current knowledge, skill level and understanding a student has. Teachers should adapt curricula in ways that challenge students.
Interests Teachers should link content to interests to hook the learner in and help to connect new information and skills to things they find intriguing and interesting.
Learning Preferences The way students prefer to learn. Teachers should help students learn in the ways that suit them and extend ways they learn.
(Tomlinson & Strickland, 2008)

Independent study is a method that modifies the curriculum using enrichment, acceleration, sophistication and novelty (Coleman, 2001).

Enrichment	Provides depth and breadth to regular classroom instruction (Townsend, 2004).
Acceleration	Involves exposing learners to new content at an earlier age, or covering the same content in less time (Townsend, 2004).
Sophistication	Sophistication brings an element of complexity and abstraction to students' learning by encouraging students to recognise relationships and patterns across ideas and disciplines, and to debate 'big' questions, such as what it is right and wrong (Coleman, 2001). Learning activities based on the higher level of Bloom's Taxonomy reflect sophistication (analyse, create, evaluate), while the lower levels (remember, understand, apply) provide a base for sophistication (Anderson & Krathwhol, 2001; Coleman, 2001).
Novelty	Provides learning opportunities through interest based studies and projects that are not usually included in the curriculum (Coleman, 2001).

Independent study is an ideal mainstream classroom provision in the secondary school context that can be used as a form of acceleration but is most often used as an enrichment strategy (Clark, 2002; Troxclair, 2000). The Ministry of Education (2000) advocates that a continuum of approaches based on enrichment and acceleration is most effective. Therefore, independent study should not be the only method used to cater for the needs of gifted and talented students (Clark, 2002).

Several curriculum models have inspired teachers to use independent study in their programmes for gifted and talented students (Johnsen & Goree, 2009). These models assume that students develop research skills over time and become more independent as their expertise develops (Brown, 2009). For example, Renzulli's (1977) Enrichment Triad includes Type III activities where independent studies are targeted at solving real world problems and engaging the student in the behaviours of a professional in the selected field (Brown, 2009). Other models include Betts and Kercher's (1999) Autonomous Learner Model and Treffinger's (1975, 1978, 1986, cited in Johnsen & Goree, 2009) Self-Initiated Learning Model.

Qualitative Differentiation

- ***Differentiating instruction: Facilitator's guide*** **(Association for Supervision and Curriculum Development, 1997).** A resource pack for differentiating instruction. This includes a facilitator's guide and videos focusing on creating multiple pathways for learning and instructional and management strategies including curriculum compacting, learning centres, tiered assignments and learning contracts.

- ***Gifted and Talented Students: Meeting their needs in New Zealand schools*** **(Ministry of Education, 2000).** Provides an introduction to gifted and talented education, providing information on identification, principles and practices and curriculum models.

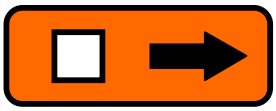
- ***Gifted and Talented Education in New Zealand Schools*** **(Riley et al., 2004a).** Provides a summary of the research by Riley et al. (2004a) that investigated the approaches of New Zealand schools in identifying and providing for gifted and talented students.

- ***Strategies for differentiating instruction: Best practices for the classroom*** **(Roberts & Inman, 2007).** This is a practical guide that includes sections on qualitative differentiation.

- ***Differentiation in practice: A resource guide for differentiating curriculum*** **(Tomlinson & Strickland, 2008).** Provides a brief explanation of differentiation and numerous examples of differentiated units of work.

- ***How to differentiate instruction in mixed-ability classrooms*** **(Tomlinson, 2001).**
- ***Teaching gifted kids in the regular classroom: Strategies and techniques every teacher can use to meet the academic needs of the gifted and talented (revised, expanded, updated edition)*** **(Winebrenner, 2001).**
- ***The differentiated classroom: Responding to the needs of all learners*** **(Tomlinson, 1999).**

  These three books define qualitative differentiation and provide practical ideas for differentiating in a regular classroom.



- **Te Kete Ipurangi online at www.tki.org.nz.** Provides an extensive gifted and talented community. This includes support for schools, teachers, students and parents, related reading, curriculum support materials and professional learning. Provides links to other websites and organisations.

Curriculum Models

- ***Teaching gifted students through independent study*** **(Johnsen & Goree, 2009).** Provides an explanation of independent study curriculum models.
- ***Gifted and talented Students: Meeting their needs in New Zealand schools*** **(Ministry of Education, 2000).** Provides a good starting point for understanding curriculum models. This is also available on www.tki.org.nz.
- ***Autonomous learner model for gifted and talented*** **(Betts, 1992).**
- The following texts provide chapters on a range of curriculum models:
  Methods and materials for teaching the gifted (**Karnes & Bean, 2009).**
  Education of the gifted and talented **(Davis & Rimm, 2004).**
  Gifted and talented: New Zealand perspectives (**McApline & Moltzen, 2004).**
  Teaching models in education of the gifted **(Maker & Schiever, 2005).**

What is Independent Study?

Independent study is a student-centred provision that involves students working in small groups or individually to investigate self-selected or teacher-selected topics related to the curriculum and to their personal interests and strengths concluding in the development of a product to demonstrate the learning acquired (Delisle & Lewis, 2003; Ministry of Education, 2000; Riley, Bevan-Brown, Bicknell, Carroll-Lind, & Kearney, 2004b; Rogers, 2002). It is a planned research process that is similar to the process used by practising professionals (Johnsen & Goree, 2009).

There are three main types of independent studies:

1. Investigative – involves setting a question or problem that students investigate to find a solution and answer
2. Conceptual – involves developing an in-depth understanding of a topic through a range of experiences
3. Ways of knowing – examines topics from several different perspectives (Cathcart, 2005).

The purpose of Independent Study

Independent study aims to:

1. Develop in-depth understanding of a topic (Cathcart, 2005).
2. Provide an opportunity to develop independent learning and research skills (Cathcart, 2005).
3. Develop self-directed learners who can investigate real-life problems in areas of interest and value to them (Clark, 2002; Framingham Public Schools Gifted and Talented Services, n.d).
4. Introduce students to the techniques of organising, researching and presenting the results of their studies (Framingham Public Schools Gifted and Talented Services, n.d).
5. Stimulate critical thinking and logical analysis (Framingham Public Schools Gifted and Talented Services, n.d).
6. Develop individual abilities and initiative (Framingham Public Schools Gifted and Talented Services, n.d).
7. Develop a sense of individual responsibility for the pursuit of goals and personal achievement and satisfaction in successfully pursuing a goal (Framingham Public Schools Gifted and Talented Services, n.d).

Why use Independent Study?

Independent study:

1. Caters to the needs, readiness, interests and learning preferences of gifted and talented students (Cathcart, 2005).
2. Allows students to experience learning beyond the classroom (Kent, 2000).
3. Encourages independence (Johnsen & Goree, 2009).
4. Teaches research skills and improves reading, writing and presentation skills (Johnsen, 2005; Strot, 1997).
5. Is suited to the characteristics of gifted and talented students, for example, persistence, goal directedness, ability to synthesise information, ability to generate original ideas, motivation and curiosity (Moltzen, 2004a).
6. Caters for gifted students arriving at secondary school who already demonstrate in-depth understanding in specific content areas and therefore require advanced material (Siegle, 1998). Specialist subject teachers in secondary schools are better equipped to “delve in-depth” into topics and have access to a wide range of authentic resources that can provide rich educational experiences (Siegle, 1998, para. 1). It may also build on students experiences of independent study in primary and intermediate school while providing support in skill development for students who have little experience in independent study.
7. Provides opportunity and time to explore in-depth topics as gifted and talented students comprehend complex ideas quickly, learn rapidly and in greater depth, and have interests that may differ from their peers (Johnsen, 2005).

8. Serves as an effective strategy for addressing the needs of underachieving gifted students as interest in a topic of study fosters task commitment (Framingham Public Schools Gifted and Talented Services, n.d).
9. Is a means of identifying gifted students not easily identified by traditional methods of assessment, such as tests, as it creates a responsive learning environment in which different methods can be used (Powers, 2008).
10. Is essential for bright students who refuse to accept "traditional learning environments and values", but who desire challenge and the "opportunity to research what personally interests them, and the freedom to guide their own learning" (Powers, 2008, p. 63).
11. Builds on student interests (Tomlinson, 2001), gives students a voice and choice in their learning, makes connections to real world experiences and provides challenge and fosters critical thinking, autonomy and independence (Powers, 2008). Choice in topics, methods and products foster interest and motivation and prevents boredom, resulting in greater task commitment (Maker & Nielson, 1996; Powers, 2008; Strot, 1997).

The teacher's role

"The teacher is crucial to the success of the independent study" (Shaunessy, 2004, p. 41). While students often have the curiosity, interest and motivation to pursue an independent study, they often lack the self-direction and skills required to achieve the set goals; therefore, the teacher must guide the student through the independent study process (Clark, 2002; Johnsen & Johnson, 1986). Teachers must equip students with the research skills required for independent study (Gallagher & Gallagher, 1994). To neglect to do this is like leaving students alone in an unfamiliar city without a map or money and asking them to meet you on the other side of town in an hour (Cathcart, 2005). The teacher is an advisor/facilitator who helps students:

- identify and define their topics
- set clear and specific objectives
- establish a realistic timeframe
- construct a workable research study programme
- monitor their progress and evaluate the final outcome (Cathcart, 2005).

- ***Differentiating instruction: Facilitator's guide*** **(Association for Supervision and Curriculum Development, 1997).** The resource videos provide a brief visual insight into how independent study is implemented in the classroom environment.

- ***Independent study program*** **(Johnsen & Johnson, 1986)**. A comprehensive resource pack that provides a framework to guide the teacher and student through the process of independent study. This pack includes a teacher guide, student booklet and resource cards. It provides set lessons and resources such as worksheets for topic selection, setting questions, product plan and evaluation.

- ***Teaching gifted students through independent study*** **(Johnsen & Goree,2009)**. Outlines independent study curriculum models (such as the Enrichment Triad) and the guidelines and steps of independent study.

- ***Beyond Room 109: Developing independent study projects*** **(Kent, 2000).** Provides a practical view from Kent's experience of implementing independent study in a regular classroom.

- ***The use of independent study as a viable differentiation technique for gifted learners in the regular classroom*** **(Powers, 2008).** Based around research on the implementation of independent study in social studies. Outlines the philosophy and benefits of independent study.

The student's role

The success of an independent study is dependent on the student fulfilling their responsibilities. This may involve the student completing the requirements of a learning contract or agreement both independently and with guidance, taking responsibility for making decisions, collecting information and meeting deadlines. Students also need to take responsibility for sharing their final product (with an appropriate audience). Finally, they may have roles in self or peer assessment.

The parent's role

Teachers must communicate with parents on what an independent study involves, the rationale for using it and the role parents may have in the study. Parents should become a coach or mentor in the independent study process providing non-judgmental expertise, prompting discussion and helping students to meet deadlines and access resources, for example providing transport to the library (Johnsen, 2005).

- ***Guiding without taking over: A parent's role in independent study*** **(Johnsen, 2005).** Provides an insight into one parent's experiences of coaching and mentoring their child in an independent study.
- ***Beyond Room 109: Developing independent study projects*** **(Kent, 2000).** Provides examples of how an independent study programme was communicated with parents.

Mentors

Mentors are an effective strategy to accompany independent studies. Mentors are usually community members from outside the school setting, however may also be teachers and older students (Ministry of Education, 2000). Mentors serve as a guide, role model, teacher and critical friend (Davis & Rimm, 2004) who inspire and extend gifted students (Cathcart, 2005). Mentoring involves teaming a gifted student with an experienced adult or older student with similar interests with the intention of guiding the student in the learning of new skills and knowledge while supporting the student in the social and emotional aspects of being gifted (Ministry of Education, 2000).

The process

Although the steps of an independent study may vary slightly, depending on the type of independent study and the study question, they generally involve the following:

1. Introducing the independent study
2. Selecting a topic
3. Organising the topic
4. Asking questions
5. Using a study method
6. Collecting information
7. Developing a product
8. Presenting information
9. Evaluating the study (Johnsen & Johnson, 1986).

Starting out

Independent study, like other qualitative differentiation approaches, evolves with time and practice as teachers reflect and evaluate on their practice. Not all the skills required for an independent study need to be taught in the first study. For example, Johnsen and Johnson (1986) recommend identifying a small set of research skills to be taught for the first independent study, expanding these skills as students' become more experienced. The initial study should be short to hold students' interests and allow them to experience the entire process successfully (Johnsen & Johnson, 1986). The teacher may determine the topic, information collection tools, products and work with students to devise questions (Johnsen & Johnson, 1986). As students' skills and independence develop they can take more autonomy in the process. Thus those skills taught in Year Nine and Ten provide students with the required skills for conducting independent studies in their senior years with greater autonomy. It is essential independent study meets students' current levels of readiness for independence and helps them move towards greater independence (Association for Supervision and Curriulum Development, 1997), therefore should build upon students' readiness, interests and learning profile (Tomlinson, 1999).

Learning agreements and contracts

Independent study agreements and contracts are a formal negotiation between teacher and students that specifies the content, process, product and timeline for the study (Ministry of Education, 2000). It attaches work conditions to the independent study and sets down clear behavioural and work expectations (Winebrenner, 2001).

- ***Teaching gifted kids in the regular classroom: Strategies and techniques every teacher can use to meet the academic needs of the gifted and talented (revised, expanded, updated edition)*** **(Winebrenner, 2001).**

- ***Teaching gifted and talented students in regular classrooms*** **(Riley, 2009).**

Both resources provide examples of student independent study contracts and agreements along with examples of contracts for work conditions.

1. Introducing independent

The process and requirements of independent study must be clearly explained to students so they understand the stages of study, due dates and the audience their results will be shared with (Johnsen & Goree, 2009). Advanced organisers, student plans and checklists are effective in guiding students and teaching them to meet deadlines and project requirements (Johnsen & Goree, 2009).

2. Topic selection

Topic choice is important as the topic motivates students to continue with the study (Powers, 2008). Ideally topics should be student selected, however teachers may provide a list of topics for students to choose from initially, gradually scaffolding students towards independence (Ministry of Education, 2000). Furthermore, it is essential to identify a student's interests and prior knowledge about a topic in order to sustain their motivation throughout the study (Johnsen, 2005).

Topics may be:

- **Self selected** - based on students' interests and what they want to learn (Framingham Public Schools Gifted and Talented Services, n.d; Johnsen & Goree, 2009).
- **Related studies** – after being exposed to a subject through teacher directed lessons, students select a topic (Framingham Public Schools Gifted and Talented Services, n.d).
- **Curricular studies** – students select a topic of interest from a teacher prepared list of topics based on a subject matter (Framingham Public Schools Gifted and Talented Services, n.d).

Strategies for identifying topics

1. Mindmaps or brainstorms are useful for generating and recalling ideas (Cathcart, 2005).
2. Teachers often ask students to 'quickly' select a topic and then encourage students to narrow their topic down to smaller more manageable subtopics; however, students can only decide on small topics once they have explored the larger topic (Winebrenner, 2001). Students should be encouraged to browse literature and other sources of information as this allows them to explore new topics (Winebrenner, 2001). The use of a topic browser allows students to explore and record topics of interest; this structures their browsing and helps the student to select a topic for in-depth study (Winebrenner, 2001).
3. Graphic organisers such as KWL charts and concept maps are also helpful in narrowing topics (Kalish, 1997; http://www.immresearch.com).
4. An interest survey can be useful in determining students' interest areas and helps the teacher guide students in selecting a topic (Winebrenner, 2001).

These strategies provide the teacher with an insight into the things gifted students may want to study in depth (Winebrenner, 2001).

- ***Independent study program*** **(Johnsen & Johnson, 1986).** Provides templates for topic planners.
- ***Strategies for differentiating instruction: Best practices for the classroom*** **(Roberts & Inman, 2007).** Provides examples and overview of using mind maps, KWL charts, interest surveys and inventories.
- ***Teaching gifted kids in the regular classroom: Strategies and techniques every teacher can use to meet the academic needs of the gifted and talented (revised, expanded, updated edition)*** **(Winebrenner, 2001).** Provides an outline of an independent study and how to use a topic browser. It also provides an example of an interest survey and resource record sheet. Adapted forms are also available at http://www.itm-info.com/wildfire/images/activities.pdf

3. Organising the topic

Teachers may need to help students organise and map out their study topics to guide them in developing specific questions or problems (Johnsen & Goree, 2009). Organisational structures may include descriptions, comparisons, causes and effects, or problems and solutions (Johnsen & Goree, 2009). These are all ways of examining a topic that can lead to the development of questions (Johnsen & Goree, 2009). For example, the topic of space exploration may be described using a brainstorm, then the identified categories may be compared with other topics and models which may lead to other organisational structures such as cause and effects or problems and solutions that lead to other questions (Johnsen & Goree, 2009).

4. Asking questions

Good study questions lead to successful and quality independent studies (Johnsen & Goree, 2009). After students have developed a good knowledge base of the topic they are ready to ask questions and pose problems (Johnsen & Goree, 2009).

A good study question:
- produces several different answers and may be pursued differently by various researchers
- is useful to the student or others
- has adequate time and resources to be studied (Johnsen & Johnson, 1986).

Questions such as how, what, when, why, where, who, how many and how long are useful in guiding students in sourcing different information about their topics (Johnsen & Goree, 2009). Models such as Bloom's taxonomy are often used as frameworks for asking questions (Anderson & Krathwhol, 2001). This allows the student to determine the complexity of the question and allows for higher order thinking and sophistication (Johnsen & Goree, 2009).

Question Type	Description	Bloom's Taxonomy
Little thinking	Answered by copying or redoing something	Remember Understand
More thinking	Can only be answered if information is applied to new settings	Apply Analyse
Most thinking	Can only be answered if the student evaluates and creates new information	Evaluate Create

- ***A taxonomy for learning, teaching, and assessing* (Anderson & Krathwhol, 2001).** Provides an outline of the revised Bloom's Taxonomy.
- ***Bloom's taxonomy of learning domains* (Clark, 2009).** Gives a brief outline of Bloom's Taxonomy.
- ***Independent study program* (Johnsen & Johnson, 1986).** Provides worksheets and lessons on writing questions.
- ***Strategies for differentiating instruction: Best practices for the classroom* (Roberts & Inman, 2007).** Includes a practical application of Bloom's Taxonomy.
- **GiftNet online at www.giftnet.ac.nz.** Provides resources for differentiation, for example, Anderson Revised Bloom's Taxonomy.

5. Using a study method

Various methods of research must be understood by teachers and students to ensure students use the methods of research appropriate to their topic and commonly practised by experts in their field of study, thus authenticating the research (Johnsen & Goree, 2009). Furthermore, students should complete a written plan of their research methods (Brown, 2009; Johnsen & Goree, 2009).

Methods of Research		
Type	**Description**	**Data collection methods**
Descriptive	Provides a detailed narrative account of a problem or phenomenon (Brown, 2009; Cohen, Manion, & Morrison, 2008). For example, investigating the leisure habits of teenage girls.	Commonly uses qualitative research methods including, questionnaires, interviews and observations (Brown, 2009).
Historical	The examination of a problem, issue or event from the past (Brown, 2009). All sources of information are pieced together to answer questions or provide solutions to the problems (Brown, 2009).	Interviews, artifacts, photographs, records, documents and audiovisual aids (Brown, 2009).
Experimental	Revolves around an experiment based on cause and effect. These have a control group and experimental group, of which the results are then compared. For example do plants respond to a certain stimuli more than others (Framingham Public Schools Gifted and Talented Services, n.d).	Any collection method appropriate to answer the research question.

6. Collecting information

Developing a strong knowledge base requires extensive reading and research of a variety of sources of information, such as audiovisual sources, artifacts, literature, numerical records, internet searches, library searches, observations, interviews and surveys (Brown, 2009; Johnsen & Goree, 2009; http://www.iimresearch.com). Students must be taught how to collect information using these methods (Johnsen & Goree, 2009). For example, students must be taught how to:

- Plan, write and conduct an interview and survey (Johnsen & Goree, 2009).

- Use key words, internet search engines and library databases (Johnsen & Goree, 2009).
- Skim material to collect relevant information and organise their findings by taking notes, using note cards and spreadsheets (Kalish, 1997).
- Reference information sources accurately (Kalish, 1997).
- Analyse the reliability and bias of data sources (Brown, 2009).

Students also need assistance in analysing and interpreting results using methods appropriate to the field of study, for example using charts, tables and graphs to recognise patterns and relationships (Brown, 2009).

Strategies for collecting and organising information

Graphic organisers can be used to organise and display complex information that is involved in analysing and evaluating issues, solving problems, or making decisions (Parks, 2009). These can be used to:

- stimulate thinking and plan projects and products
- hold and organise information for research and evaluation
- display relationships
- stimulate and guide thinking (Parks, 2009).

Graphic organisers may include:

- flowcharts
- venn diagrams
- concept maps
- data retrieval charts
- research charts
- web diagrams (Parks, 2009).

- ***They're not bringing my brain out: Understanding and working with gifted and talented learners*** **(Cathcart, 2005)**. Discusses study and research skills, observation, communication, thinking and organisational skills.
- ***Strategies for differentiating instruction: Best practices for the classroom*** **(Roberts & Inman, 2007).** Provides examples and an overview of using venn diagrams.

7. Developing a product

Products are tangible evidence of student learning and are valid assessment tools that provide the learner with individuality and creativity in deciding how to exhibit the knowledge they have gained (Kalish, 1997). Therefore, products should not be limited to a written report. Products should match those required in the field of study, for example, a naturalist would keep a journal and attach pictures as examples (Johnsen & Goree, 2009). The teacher should teach the skills and requirements of product development, for example teaching students who have selected to do a timeline how to draw a timeline

manually and electronically (Johnsen & Goree, 2009). Of great importance at the secondary school level is teaching students how to paraphrase and write information 'in their own words'; they must be taught how to avoid plagiarism (http://www.iimresearch.com).

Things to consider:

- Use a learning style survey to help students identify their learning preferences and the products and presentations they may use (Roberts & Inman, 2007).
- Students should plan the product before making it (http://www.iimresearch.com).
- Use rubrics for quality work (http://www.iimresearch.com).
- Match product type with potential audience (http://www.iimresearch.com).

PRODUCT IDEAS	
Speech	Costume
Debate	Diagram
Discussion	Drawing
Journal Article	Collage
Letters	Poster
Newspaper article	Book
Poem	Brochure
Research report	Collection/Exhibition
Story	TV advertisement
Dance	Court trial simulation
Write a policy or new law	Display
Write and/or perform a song	Computer graphic
Role play	Film/Video
Demonstration	Invention
Design and construct an experiment or a piece of research (e.g. ethnography)	Resource pack
	Seminar/lesson
Construction/Sculptures	Powerpoint presentation
Portfolio	Production of a consumer product
Dramatisation	Web page
Computer programme	Develop a solution to solve a community problem

Adapted from Maker & Nielson(1996, p. 172) and Tomlinson (2001, p. 89)

- ***Strategies for differentiating instruction: Best practices for the classroom*** **(Roberts & Inman, 2007).** Provides a multiple intelligences checklist and also includes *My Way…An Expression Style Inventory* to determine what products students are interested in creating.

- ***Teaching gifted kids in the regular classroom: Strategies and techniques every teacher can use to meet the academic needs of the gifted and talented (revised, expanded, updated edition)*** **(Winebrenner, 2001).** Provides resources suggestions.

- ***Product development for gifted students*** **(Stephens & Karnes, 2009).** Provides and extensive list of types of products.

- ***Neag Centre for Gifted Education and Talent Development online at www.*****gifted.uconn.edu**
  A comprehensive gifted and talented website that includes *My Way…An Expression Style Inventory.*

8. Presenting information

Providing students with the opportunity to share their findings with an authentic audience validates the importance of their work, provides motivation and allows students to receive feedback from experts in the field of study, professionals and others (Brown, 2009). The presentation stage generally involves a form of oral presentation. Powers (2008) found that the presentation phase caused students the most stress and concern during the entire independent study experience. Therefore, students need to understand the reasons for sharing products (Johnsen & Goree, 2009) and should be taught how to present to different audiences (http://www.immresearch.com). For example, if presenting a speech students may analyse the techniques of public speakers. Furthermore, students should be given an opportunity to have a "dry run" of their presentation to evaluate and improve their performance (Kalish, 1997, para. 30).

Sharing a product allows:
- students to improve their products
- others to help evaluate the product
- students to gather support for their product (Johnsen & Goree, 2009).

Types of product presentations:
- oral reports
- demonstrations
- performances
- displays (Johnsen & Goree, 2009).

9. Evaluating the study

Evaluation of independent studies can be formative and/or summative (Johnsen & Goree, 2009). Summative evaluation is used in judging the independent study products (Johnsen & Goree, 2009). Evaluation should focus on what the student has learned and what they might improve on (Johnsen & Goree, 2009). Students should also evaluate themselves and reflect on their work noting the strengths and weaknesses (Brown, 2009). Therefore, independent study should be assessed using qualitative criteria rather than quantitative criteria to emphasise the value of "learning to learn" rather than measuring what was learned (Riley et al., 2004b, p.83). Teachers, peers and experts should be used to evaluate presentations and products (Johnsen & Goree, 2009).

Evaluation strategies

Checklist and rubrics can be designed with specific criteria listed for each type of product (Johnsen & Goree, 2009).

- ***Teaching gifted kids in the regular classroom: Strategies and techniques every teacher can use to meet the academic needs of the gifted and talented (revised, expanded, updated edition)*** **(Winebrenner, 2001).** Includes student self-evaluation checklist and discusses evaluation of students' work.

Things to consider

- Independent study requires significant preparation including planning out-of-school experiences and field trips (Tomlinson, 2001).
- Independent study may leave some students feeling stressed and dissatisfied with work outcomes below their expectation and intention (Cathcart, 2005). This could be due to:
  1. a broad and poorly defined topic
  2. the required independent study skills having not been taught
  3. insufficient guidance throughout the study (Cathcart, 2005).
- Allocate time to meet with students individually to communicate expectations and monitor progress (Strot, 1997).
- Consider the management of students working outside the classroom.

Locating resources

The resources presented here are available online, and from online bookstores such as www.fishpond.co.nz, www.amazon.com and Learning Network NZ (www.waec.ac.nz). The New Zealand Association for Gifted Children (NZAGC) has an extensive library for members (www.giftedchildren.org.nz). Furthermore, some university libraries have teacher memberships. For example, the Massey University library allows teachers at secondary schools in Auckland, Palmerston North and Wellington to borrow books free of charge for two weeks (http://library.massey.ac.nz).

Others sources of information may include:

- Specialist Classroom Teacher.
- Regular classroom teachers who may have experience in implementing independent studies.
- Gifted and talented programme school coordinator.
- www.googlescholar.com

Concluding comment

“Independent study is only one way of meeting the needs of gifted students – students quickly become bored with repetition of projects leading to more and more products. Teachers will want to include many different strategies in their programs and limit independent studies to student driven interests” (Johnsen & Goree, 2009, p. 425).

WORKS END

THANK YOU

REFERENCES

Anderson, L. W., & Krathwhol, D. R. (Eds.). (2001). *A taxonomy for learning, teaching, and assessing*. New York: Addison Wesley Longman.

Association for Supervision and Curriculum Development. (1997). *Differentiating instruction: Facilitators guide*. Alexandria, Virginia: Association for Supervision and Curriculum Development.

Betts, G. T. (1992). *Autonomous learner model for gifted and talented.* Cheltenham, Vic: Hawker Brownlow Education.

Betts, G. T., & Kercher, J. K. (1999). *The autonomous learner model: Optimizing ability*. Chelthem, VIC: Hawker Brownlow.

Brown, K. (2009). Developing research skills in gifted learners. In F. A. Karnes & S. M. Bean (Eds.), *Methods and materials for teaching the gifted* (3rd ed., pp. 381-413). Waco, Texas: Prufrock Press.

Cathcart, R. (2005). *They're not bringing my brain out: Understanding and working with gifted and talented learners* (3rd ed.). Rotorua: REACH Publications.

Clark, B. (2002). *Growing up gifted* (6th ed.). Upper Saddle River, New Jersey: Merrill Prentice Hall.

Clark, D. (n.d). Bloom's taxonomy of learning domains. *Big Dog & Little Dog's Performance Juxtaposition.* Retrieved September 29, 2009, from http://www.nwlink.com/~donclark/hrd/bloom.html

Cohen, L., Manion, L., & Morrison, K. (2008). *Research methods in education* (6th ed.). New York: Routledge.

Coleman, M. R. (2001). Curriculum differentiation: Sophistication. *Gifted Child Today, 24*(2), 24-26. Retrieved September 24, 2009, from MasterFILE Premier.

Davis, G. A., & Rimm, S. B. (2004). *Education of the gifted and talented* (5th ed.). Boston: Pearson Education.

Delisle, J., & Lewis, B. A. (2003). *The survival guide for teachers of giftedkids: How to plan, manage, and evaluate programs for gifted youth K-12*. Minneapolis: Free Spirit Publishing Inc.

Education Review Office (1998). Working with students with special abilities. Retrieved May 14, 2009, from http://www.ero.govt.nz/Publication/

Education Review Office (2008). Schools provisions for gifted and talented students: Good practice. Retrieved May 20, 2009, from http://www.ero.govt.nz/ero/publishing.nsf/Content/Reports+-+National+Reports

Framingham Public Schools Gifted and Talented Services (n.d). Independent Study. Retrieved September 24, 2009, from http://pages.framingham.k12.ma.us/sage/Independentstudy.html

Gallagher, J. J., & Gallagher, S. A. (1994). *Teaching the gifted child* (4th ed.). Needham Heights: Allyn and Bacon.

Johnsen, S. K. (2005). Guiding without taking over: A parent's role in independent study. *Duke Gifted Newsletter.* Retrieved September 24, 2009, from http://www.dukegiftedletter.com/articles/vol5no3_connex.html

Johnsen, S. K., & Goree, K. K. (2009). Teaching gifted students through independent study. In F. A. Karnes & S. M. Bean (Eds.), *Methods and materials for teaching the gifted* (3rd ed., pp. 415-445). Waco, Texas: Prufrock Press.

Johnsen, S. K., & Johnson, K. (1986). *Independent study program*. Waco, Texas: Prufrock Press.

Kalish, R. B. (1997). Presentations: A sequenced step-by-step independent study. [Electronic Version]. *Gifted Child Today Magazine, 20*(6), 32-37,45,47.

Karnes, F., & Bean, S. (Eds.). (2009). *Methods and materials for teaching the gifted* (3rd ed.). Waco. TX: Prufrock Press Inc.

Kent, R. (2000). *Beyond room 109: Developing independent study projects*. Portsmouth: Boynton/Cook Publishers, Inc.

Maker, C. J., & Nielson, A. B. (1996). *Curriculum development and teaching strategies for gifted learners* (2nd ed.). Austin, Texas: Pro-Ed, Inc.

Maker, C. J., & Schiever, S. W. (2005). Teaching models in education of the gifted (3rd ed.). Austin, Texas: Pro-Ed, Inc.

McAlpine, D & Moltzen, R. (Eds.). (2004). *Gifted and talented: New Zealand perspectives* (2nd ed). Palmerston North: Kanuka Grove press.

Ministry of Education (2000). *Gifted and talented students: Meeting their needs in New Zealand schools*. Wellington: Learning Media.

Ministry of Education (2007). *The New Zealand curriculum.* Wellington: Learning Media Limited.

Moltzen, R. (2004a). Characteristics of gifted children. In D. McApline & R. Molzten (Eds.), *Gifted and talented New Zealand perspectives* (2nd ed., pp. 67-92). Palmerston North: Kanuka Grove Press.

Moltzen, R. (2004b). Historical perspectives. In D. McAlpine & R. Moltzen (Eds.), *Gifted and talented: New Zealand perspectives* (2nd ed., pp. 1-32). Palmerston North: Kanuka Grove Press.

New Zealand Qualifications Authority (2001). NCEA communications - delivering the facts. *QA News.* Retrieved May 22, 2009, from http://www.nzqa.govt.nz/publications/newsletters/qanews/feburary-2001/featurencea.html

Parks, S. (2009). Teaching analytical and critical thinking skills in gifted education. In F. A. Karnes & S. M. Bean (Eds.), *Methods and materials for teaching the gifted* (3rd ed., pp. 261-300). Waco, Texas: Prufrock Press Inc.

Powers, E. A. (2008). The use of independent study as a viable differentiation technique for gifted learners in the regular classroom. [Electronic Version]. *Gifted Child Today, 31*(3), 57-65.

Renzulli, J. S. (1977). *The enrichment triad model: A guide for developing defensive programs for the gifted and talented*. Weathersfield, Conn: Creative Learning Press.

Riley, T. (2004). Qualitative differentiation for gifted and talented students. In D. McAlpine & R. Moltzen (Eds.), *Gifted and talented: New Zealand perspectives* (2nd ed., pp. 345-370). Palmerston North: Kanuka Grove Press.

Riley, T. (2009). Teaching gifted and talented students in regular classrooms. In F. Karnes & S. Bean (Eds.), *Methods and materials for teaching the gifted* (pp. 631-672). Waco. TX: Prufrock Press Inc.

Riley, T., Bevan-Brown, J., Bicknell, B., Carroll-Lind, J., & Kearney, A. (2004a). *Gifted and talented education in New Zealand schools.* Wellington: Ministry of Education.

Riley, T., Bevan-Brown, J., Bicknell, B., Carroll-Lind, J., & Kearney, A. (2004b). *The extent, nature and effectiveness of planned approaches in New Zealand schools for identifying and providing for gifted and talented students*. Wellington: Ministry of Education.

Roberts, J. L., & Inman, T. F. (2007). *Strategies for differentiating instruction: Best practices for the classroom*. Waco, TX: Prufrock Press Inc.

Rogers, K. B. (2002). *Re-Forming gifted education: How parents and teachers can match the program to the gifted child*. Scottsdale: Great Potential Press, Inc.

Shaunessy, E. (2004). The senior project and gifted education. [Electronic Version]. *Gifted Child Today, 27*(3), 38-51.

Siegle, D. (1998). An independent study model for secondary school students. *Neag Center for Gifted Education and Talent Development*. Retrieved September 24, 2009, from http;//www.gifted.uconn.edu/nrcgt/newsletter/spring98/sprng987.html

Strot, M. (1997). Electronic explorations. *Gifted Child Today Magazine, 20*(2), 12-18. Retrieved September 24, 2009, from MasterFILE Premier.

Stephens, K. R., & Karnes, F. A. (2009). Product development for gifted students. In F. A. Karnes & S. M. Bean (Eds.), *Methods and materials for teaching the gifted* (3rd ed., pp. 157-184). Waco, TX: Prucfrock Press Inc.

Tomlinson, C. A. (1999). *The differentiated classroom: Responding to the needs of all learners.* Alexandria, VA: Association of Supervision and Curriculum Development.

Tomlinson, C. A. (2001). *How to differentiate instruction in mixed-ability classrooms* (2nd ed.). Alexandria, Virginia: Association for Supervision and Curriculum Development.

Tomlinson, C. A., & Strickland, C. A. (2008). *Differentiation in practice: A resource guide for differentiating curriculum*. Alexandria, VA: Association for Supervision and Curriculum Development.

Townsend, M. (2004). Acceleration and enrichment: A union rather than a choice. In D. McAlpine & R. Moltzen (Eds.), *Gifted and talented New Zealand perspectives* (2nd ed., pp. 289-308). Palmerston North: Kanuka Grove Press.

Troxclair, D. A. (2000). Differentiating instruction for gifted students in regular education social studies classes. *Roeper Review, 22*(3), 195. Retrieved September 24, 2009, from General OneFile.

Winebrenner, S. (2001). *Teaching gifted kids in the regular classroom: Strategies and techniques every teacher can use to meet the academic needs of the gifted and talented (revised, expanded, updated edition)*. Minneapolis, MN: Free Spirit Publishing Inc.