The Use of Independent Study as a Viable Differentiation Technique for Gifted Learners in the Regular Classroom

by Elaine A. Powers

All students are entitled to a respectful and meaningful education in this decade of No Child Left Behind (2001), and yet attention to the gifted wanes with the emphasis on standards-based education and testing. Educators of the gifted have wrestled with this dilemma for many decades, even as early as the 1920s when Leta S. Hollingsworth, noted "mother of gifted education," first studied the issue of what constitutes a respectful and challenging education for the gifted (Jolly, 2006). Since that time, educators have agreed that gifted students need an educational plan that is tailored to their own unique needs and abilities (Betts, 2004; Keighley, 2003; Tomlinson, 2004). Differentiated instruction addresses the needs of the gifted in the diverse, mixed-ability classrooms of today by adapting the content, process, or product with regards to the varying interests and readiness levels of the students. Independent study, a differentiation technique recommended for use with the gifted, offers students input into their own learning while providing challenge and critical thinking skills.

Background of the Study

Therefore, if gifted learners are to progress in their education and not be "left ahead" so to speak, three practices are recommended for a sound gifted education: (1) student choice and voice, (2) the use of independent study, and (3) connection to real-world experiences.

Student Choice and Voice

Tomlinson (2004) referred to shared responsibility for differentiating instruction between teacher and student as a "synergy" for success that honors the talents and uniqueness of the individual while contributing to the whole. She defined differentiation as a match between content (what the student learns), process (how it is learned), and product (how the learning is demonstrated) and the readiness level, interests, and learning preference of the student. Simply put, learning matches the student's needs, and such a match maximizes challenge and growth, heightens motivation, and increases movement toward autonomy and learning success, results that we want for our gifted learners.

One way to know what gifted kids want in their education is to ask them. Brown and Gilligan (1993) called it giving them a "voice," a chance to tell us what they want pertaining to their own learning and to take responsibility for it. Gifted students want to choose areas of study that are interesting to them and to delve more deeply into an area of intense interest (Betts, 2004; Keighley, 2003; Little, 2004). In asking gifted teens to talk about their intensities and interests, Schultz and Delisle (2007) received the following response: "The difference between passions and interests? Simple: semantics" (Boy, age 15, p. 22). Shared responsibility for the decision-making process and development of their own courses of study also are recurring requests from the gifted. "I like it best when I can choose my own topics and then the teacher builds the school stuff I do around it" (Schultz & Delisle, 2007, Girl, age 14, p. 86).

They seek a challenge. Lack of challenge, specifically noted as relearning and regurgitating information, repetition, and classroom routine, is the most commonly and frequently identified cause for boredom, lack of motivation, and low self-image for gifted students (Keighley, 2003). The antithesis to boredom is student choice; choice connotes interest. Interest comes from a source of passion or motivation from within the student that is both self-directed and consuming for gifted individuals. Parents as well as teachers have observed that when a gifted person is interested in something, it can hold her attention for long periods of time and is usually verbalized, studied, and desired intensely. In support of such fervor, Betts (2004) stated that educational opportunities for the gifted are meaningless unless the students are allowed to have input into their own learning. Gentry and Springer (2002) identified choice, ownership, and interest as strong motivators for learning and achievement among secondary students while a study of middle school students demonstrated that self-regulated learning and student choice actually improved motivation and academic performance (Pintrich & DeGroot, 1990). The challenge for educators, therefore, is to connect areas of student interest to the classroom and to achievement by encouraging choice and voice.

Use of Independent Study as a Viable Differentiation Technique

Independent study (IS) is a highly encouraged differentiation technique by educators of the gifted that offers student autonomy and challenge in the learning process. Betts (2004) regarded independent study as the highest level of learning because it connects the interests and readiness level of the individual student to essential critical thinking skills for gifted education: decision making, investigation, problem solving, inquiry, questioning, and reflection (Pugh, 1999). Classroom teachers, however, shy away from its use due to inexperience with the method and questions as to how to monitor and assess the learning (Betts, 2004; Douglas, 2004; Tomlinson, 1995, 2004). Teachers of the gifted need to provide regular education teachers with plans and methods for independent study that are both effective and user-friendly. An ongoing collaboration between teachers and students with the goal in mind to design and refine an effective independent learning experience is essential for success in the process.

Gross (2004) found that personal success and challenge had a positive impact on the psychosocial development of the exceptionally gifted as measured on subscales for social self-concept and self-esteem. Her subjects offered strong opinions about the need for an appropriate individualized educational program coupled with teacher awareness and support. Hargrove (2005) contended that great teachers of the gifted challenge students while simultaneously offering support, like a coach at a sporting event. Little (2004) added that the need for teacher support is emotional as well as academic, and the result of negative attitudes from educators breeds underachievement, personality changes, and various social problems. Interviews with gifted nonproducing middle and high school students revealed five interdependent components as essential to student motivation and achievement: control, choice, challenge, complexity, and a caring teacher (Keighley, 2003). These so-called five C's actually determined the extent of the students' engagement in the learning and subsequent productivity. Zentall, Moon, Hall, & Grskovic (2001) found that even as young as elementary school, student choice enhanced the motivation to learn, the level of engagement on a

certain task, and the amount learned for gifted students.

Cashion and Sullenger (2000) stated that obstacles to change, such as grading, monitoring, and lack of time, can be overcome through the proper set up and structure of the independent study. Teachers who used independent study effectively reported a "domino effect" of success and cited feelings of being more confident, effective, and happy as educators because they attempted to meet the needs of their top students. Hargrove (2005) asked the question, "What makes a teacher of the gifted great?" The answer is that he or she provides a natural critical learning environment for making decisions, defending choices, and examining evidence. Troxclair (2000) acknowledged that with the provision of sample lesson plans, timelines, work logs, and student-teacher communication ideas, independent projects for the gifted can be easily managed by the regular education teacher.

Social Studies and Real-World Connections

"Every day you live becomes a piece of history, and every living person on earth is connected by that one single concept" (Purnell, 2007, p. 9). The universal themes inherent in the social sciences can offer in-depth learning and critical thinking skills conducive to independent study (Cannon, 2002). Troxclair (2000) confirmed that the new goals and expectations recently developed by the National Council for the Social Studies (NCSS) foster such themes as time, continuity, and change that facilitate the higher level thinking skills associated with Bloom's taxonomy (application, analysis, synthesis, and evaluation). Use of independent study in social studies is highly encouraged by NCSS as a way to differentiate and go beyond the traditional textbook/worksheet-centered approach that teaches to the knowledge and comprehension levels covered in most classrooms. The teacher can address varied interests, abilities, and levels of challenge by systematically developing and connecting the learning to those universal themes. Social studies concepts represent the whole of the human experience: the arts, literature, politics, government, philosophy, and psychology. Gifted students' abilities to think abstractly and to see unusual connections make this a suitable approach. Together social studies and independent study give teacher and student opportunities and choices for setting up excellent high-end differentiated learning experiences.

Kaplan (2002) supported the natural alignment of the content and instruction of social studies with the differentiation of curricula especially by using real-world simulations, role-playing, and independent study. Redesigning the social studies lesson into an independent study will translate potential into performance for gifted students and encourage participation and completion of a lesson deemed worthy of their involvement and investigation. Alleman and Brophy (2003) regarded the study of history, with its investigation into the past, its enduring themes and questions, and its connection to real-world issues, as powerful material for in-depth study by gifted students.

Purnell (2007) believes that technology has been the biggest boost to the teaching of social studies and independent study. The Internet provides access to background information, resources, and research that integrate the content knowledge into the process and product. Internet-based learning advances the research, reading, writing, and presentation skills of gifted learners. Students can design their own learning while simultaneously improving their own technology skills, such as creating PowerPoint presentations or citing sources from digital historical archives, or developing their oral public speaking and presentation skills (Strot, 1997). In a study examining the performance of middle and high school students on an online historical thinking task, Tally and Goldenberg (2005) determined that the use of digital historical documents improved the critical thinking skills and performance level of students. Students felt more motivated, more connected to the learning, and more in touch with history even with minimal instruction in their chosen topic. Independent study in the social sciences with the infusion of real-world connections and tasks looks promising as a differentiated practice for gifted students (Kaplan, 2002). Students would have choices into learning while using the higher level research and thinking skills necessary for critical analysis and problem solving.

Research Questions

The purpose of this study was to analyze the connection between student choice, the use of independent study, and the connection of social studies with real-world experiences as motivating factors for student achievement in gifted seventh-grade social studies students.

1. Does the use of independent study foster motivation and achievement for gifted students?
2. Does student choice motivate student participation and achievement in independent study?
3. How does the partnership of social studies and real-world tasks motivate historical thinking and achievement?

The Independent Study

Students participated in an Inventions Independent Study that investigated the use of independent study as a viable differentiation technique for gifted middle school students in seventh-grade social studies. The essential question asked was: Inventions reflect man's attempt to meet the needs of his century. In light of past attempts to meet those needs, what are the needs of this century and how can they be met? After analyzing the needs of this century, students were asked to design an invention or idea that has relevance for the future of this century. They explored the history of their invention or idea and then designed their invention to meet a crucial prospective need. Students produced a portfolio that included a notebook with work logs and a timeline of activities, an accompanying poster, and a PowerPoint presentation. An oral presentation of the project to an audience of guests and peers was their culminating activity.

Participants

Participants were from a middle school in Arlington, VA, that hosts a diverse, multicultural population of approximately 800 students. A seventh-grade social studies teacher proposed this study due to his desire to challenge several gifted students in his classes. Twenty students, 10 girls and 10 boys, were selected from his five class periods who had demonstrated high abilities and interest in social studies and were in need of a differentiated learning experience. An invention's study was created based upon the Powers Plan (see Appendix A), a research-based and field-tested method of independent study used by middle school teachers in Arlington County. Six areas that researchers agree are necessary for a successful independent study formed the basis for the plan: (1) preparation, (2) planning, (3) probing, (4) productivity, (5) presentation, and (6) portfolio (Betts, 2004; Kaplan & Gould, 2002).

Methodology

For the study, the plan had three phases: the research phase, the invention phase, and the presentation phase. In the research phase, the students chose an area of expertise, gathered data, and proved the need for an invention in that area. After reviewing of a number of inventions, they found 19th-, 20th-, and early 21st-century inventions that influenced their own design. Students kept a work log so they could keep a record of their findings and sources. In the invention's phase, the students wrote a proposal and created a poster that displayed the rationale and design for their invention. Phase three, the presentation phase, consisted of a PowerPoint presentation, a script, and an oral presentation of their findings to an audience of peers and invited guests such as teachers, family, or community members. For example, a person from a local Arlington environmental agency came for the presentation on a new way to prevent global warming. The independent studies' portfolios were graded with a rubric that was given to the students at the beginning of the project (see Appendix B). The entire study from start to finish took 8 weeks to complete, with students working in the library computer lab in lieu of regular classes for 2–3 classes per week.

The primary data collection methods used for this study were qualitative to include reflections, surveys/questionnaires, and interviews. Student reactions were recorded before, during, and after the study. Twelve questions were given to the students to record responses to three categories of questions: (1) the use of independent study (questions 1–4), (2) topic choice and in-depth learning (questions 5–8), and (3) doing real-world tasks (questions 9–12). (See Table 1.) High positive comments for the poststudy revealed high motivation and interest in all categories, even where responses began low. A dip in the learning curve on question 7 may be due to the fact that students expressed that the work was harder than they first expected, but "in a good way." Question 12 showed the change from fear of public speaking to the positive after effect. Overcoming skepticism or newness to the experience may explain the rise in positive responses for questions 2 and 4. Responses to the questions addressing the use of independent study and student choice began high and remained high throughout the study. When asked if the students would participate in another IS in the future, 100% said yes.

All surveys and questionnaires were peer reviewed by a seventh-grade student and a veteran certified seventh-grade reading teacher. Selected students and two seventh-grade social studies teachers were interviewed. Interviews were informal meetings that fostered discussion and inquiry into specific questions or provided further discussion and clarification of data (see Appendix C). Coding was done for all qualitative samples by color-coding and tallies and entered on charts to record summative data. Positive responses made by students were recorded by low, medium, or high responses and coded according to themes and recurring words or phrases. Artifacts were the final student portfolios, complete with notebook, poster, PowerPoint presentation, and oral script.

Results

Student Responses

Only 2 out of the 20 students dropped out during the first phase (the research phase) of the study. In a follow-up interview with the students, student #1 replied that he did not want to do research and did not like computer work; student #2 said, "This is too much work. I'd rather be in the regular class." Two additional students dropped out due to winter illnesses for which they fell too far behind. Of the remaining 16 students who chose to continue with the study, comments indicated that they were ready to do an independent study, ready for an alternative to classroom learning, and were interested in choosing and creating their own invention.

When asked what the students gained from the experience, the responses fit into three major categories: the opportunity to choose a topic of interest, to analyze a relevant contemporary issue with more depth, and to be challenged beyond the regular coursework by doing real-world tasks (i.e., use of technology, problem solving, historical research, and oral presentations). Examples of each are included below:

1. *choice* (e.g., passion expressed about a cause, frustration as to why more was not known or done about this problem or why others were not as concerned as they were, choosing a topic that "I believe in" was important to me);
2. *topic depth* (e.g., satisfaction or excitement expressed "to learn more about ___," "to learn new things about ___," "to get to be the expert in ___"); and
3. *real-world tasks* (e.g., use of the computer, getting to invent something that could actually be used to help the future, inventing something unique, getting to talk about a real solution, doing something important).

Table 1
Frequency of Positive Responses

Positive Response Level: 0–5 = Low; 6–10 = Medium; 11–16 = High	Prestudy	Midstudy	Poststudy
1. I would like to participate in an independent study (IS) so that I can be challenged.	H	H	H
2. IS gives me a positive learning alternative to the regular classroom routine.	M	M	H
3. IS gives me a way to make choices in my learning and an opportunity to design my own learning.	H	H	H
4. I hope to learn a lot from this study.	M	M	H
5. Choosing my own area of interest is important to me.	H	H	H
6. Delving into my own topic and learning more about it is an added benefit to this experience.	H	H	H
7. I'd like to have more experiences like this one.	H	M	H
8. I value learning on my own.	H	H	H
9. The historical context will make this a better study.	L	M	H
10. Finding and solving a real-world problem makes this experience worthwhile.	H	H	H
11. Use of the computer for research and PowerPoint makes the study interesting.	M	H	H
12. Presenting the results to an audience makes the study real and important.	L	L	H

A 5-point Likert-scale (1 = *not at all* and 5 = *extremely*) was used to determine the extent of poststudy agreement for the recurring themes listed in Table 2.

When asked what they did not like about the research phase, 98% said "nothing," or indicated that the study was "harder than they had first thought it would be"; however, when probed further, they indicated that it was harder "in a good way," meaning that they had to work at searching out and finding pertinent information, making historical connections, and synthesizing data. These particular skills were not typical ways of thinking and created a learning challenge for the students, something we want for gifted kids. The brainstorming portion of the study was mentioned positively by every student as a way to get to examine the history and background of a real-world problem, to generate more ideas, and to investigate a relevant topic, ideas that were

Table 2
Recurring Themes and Their Values

Responses	Percentage of 1 + 2	Percentage of 3 + 4
Choice		100%
Interest		100%
Real-world connection	12%	88%
Historical connection	25%	75%
Depth of learning	18%	82%
Research experience	7%	93%
Audience presentation	37%	63%

Table 3
Repeated Words and Phrases Denoting Positive Response

Repeated Coded Words/Ideas	Repeated Coded Phrases
fun	I liked doing IS
interesting, exciting, new	I learned, I learned how, I realized
educational, informative	Increase in knowledge, learned to budget my time, learned about the past
connecting	Connecting to inventions, connecting to the past, connecting to the future
hard, time-consuming	A lot of research, found more or better information, had to push myself
challenging, stimulating, enriching, enhancing, intriguing	Made me think, in-depth knowledge.
readiness	Ready, did my best, I feel ready
fear of speaking/the audience	I don't like to talk in front of an audience, I am really shy
proud/pride	Respect for history, proud of my own work, did it on my own

important to the students. The only negative comments revealed that students wanted more time and information so that they could research in even more depth, or wanted others to "care more about [his or her] cause," all statements that actually supported student motivation and were indicative of gifted concerns.

Concerning the inventions phase of the project, 100% of the students stated that an inventions project was an excellent project choice for an independent study due to the thinking it generated and that they would do it again. When asked to give three adjectives to describe their experience, the top three adjectives coded were, "fun," "interesting," and "educational" or "informative." When asked to further elaborate on the word, "fun," students related that the word implied enjoyment and satisfaction in the learning process and a feeling of positive personal achievement and success. Other adjectives that expressed interest and motivation that indicated increased achievement were: enhancing, creative, intriguing, "mindworking," stimulating, enriching, and challenging. No negative adjectives were expressed. Repeated words and phrases, coded and grouped together by topic, were recorded if repeated by students in reflections or interviews two or more times are shown in Table 3.

The presentation phase caused the students the most stress and concern during the total experience. Students, though they generally felt good and proud about their work, were most hesitant and fearful about the oral part and presenting the material to an audience of their peers.

As the study progressed, other "negative" responses indicated frustration when the teacher needed them in class and they could not be released to work on their own, winter weather issues that caused days off, or they could not meet due to scheduling or other reasons. Exposure to higher levels of thinking (i.e., research skills, data synthesis) that at first seemed hard caused a dip in motivation that was soon overcome with further exposure and practice of the skill; therefore, students were learning.

Comments that students made during work times and noted by the researcher were generally positive statements: to encourage one another, to help each other find and share information, to express satisfaction over finding information, or to express amazement or delight at their own discoveries or progress. Student comments to the researcher while passing in the hallway included asking when they could work on their project again and/or if this was their project day, indicating motivation for the learning experience.

In response to the poststudy questions, 100% of the students stated that choice to participate and their choice of a topic was important to them and motivated them to continue to participate in the study and to finish the project. Two highly recurring statements about choice were that they appreciated the opportunity to research a topic of interest more thoroughly and that it made them feel like they were doing something relevant; all of the students who completed the project stated that they would do an independent study again.

Students were asked to find a real-world problem that would most likely exist in the next 50 years and design an invention that would meet that need. They were then asked to trace their idea through the 19th, 20th, and early 21st centuries. Responses to the connection of the history of their inventions through the centuries to their present-day idea or invention revealed three recurring themes:

1. It added to their knowledge base (e.g., "If you want to make something new, you should look at its history.").
2. It gave them a broader world view. (e.g., "I now respect and am more

interested in history and people's problems.").
3. It provided awareness and clarity to see the issue in its historical setting (e.g., "It was cool to see the history of things related to my invention.").

The student responses overwhelmingly support the literature that demands choice, independent study, and real-world tasks for our most highly able students.

Teacher Responses

Interviews for both of the social studies teachers involved in the study and a former social studies teacher who used the Powers Plan revealed three particular themes. They were excited about doing the following for gifted students:

1. fostering critical thinking skills in those students ready for higher level learning,
2. providing personal choice and subject depth for those students with an intense curiosity and interest in a topic, and
3. allowing students to use research and computer skills that they would not use on a regular basis.

The findings reiterated the necessity for voice and choice, challenge, and critical thinking for our high-ability students. Both teachers noted the overwhelming positive feedback by parents and students involved in the project and said that they would (absolutely, definitely) allow students to participate in another independent study. When all artifacts were collected, students and teachers reacted positively to their final portfolio. The validity of an independent study as a viable differentiation technique to foster motivation and achievement in social studies for gifted middle school students was substantiated.

Discussion

Students who are intellectually and creatively gifted desire a challenge that goes beyond the regular education classroom, and differentiation is a means for teachers to adapt the learning to their needs and readiness levels. Independent study fosters high motivation for achievement in gifted students by allowing them to develop critical thinking skills, to delve deeply into a topic of special interest, and to design and execute their own learning. A method for independent study like the Powers Plan removes some of the hesitancy felt by teachers and gives them positive feelings about meeting the needs of the gifted students in their classrooms. The project becomes a synergism, a shared responsibility for the learning by teacher and student (Tomlinson, 2004). Students are autonomous in the selection of content and responsible for the direction and outcome of the learning process and final product. Students actively engage in the challenge of higher level learning and are motivated to achieve to their potential. The teacher actively supports the gifted learner emotionally and intellectually by providing feedback and guidance on a challenging task. Independent study creates a win-win situation for both teacher and student.

Implications for the Future

Independent study provides a means of alternative assessment for identifying those students who are not easily identified by traditional methods of assessment, such as test scores. With the continuing need to better identify and support minority students in gifted education, independent study allows opportunities to motivate and observe students throughout the learning process. The resulting portfolio offers a means to assess underachievers while giving those students an opportunity for success. It also is a means to identify and prepare those high-ability students who demonstrate future potential for IB and AP classes by providing the opportunity to engage in real-world problem solving, research, and presentation tasks. Lilo Stephens, a seventh-grade social studies teacher who has used the Powers Plan, sums it up nicely: "Independent study is essential for those students who are bright but refuse to accept traditional learning environments and values. They desire challenge, the opportunity to research what personally interests them, and the freedom to guide their own learning. It is a wonderful opportunity for gifted students who achieve less than their potential to shine." It doesn't get any better than that. GCT

Sample of Student Projects

The Kinetic Adaptable Telescope—an unmanned, retrievable telescope for deep space and black holes.
Recycled Chic Clothing—affordable, recyclable clothing of the future.
PO-TRON 3000 Police Car—made from the toughest material possible to aid in everyday police actions.
The Shot-o-Matic Basketball—gives students the best possible technique and practice.
Radio Glasses and Sleep Masks—prevents hearing loss, insomnia, ADHD, and other noise and environmental distractions.
Healing Tissue—fabric that aids in the healing process.
100% Recyclable Car—car made entirely from recyclable materials
The Brain-o-Graph—device that allows pet owners to know what their pets are thinking.

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Appendix A
The Powers Plan

This plan is a field-tested and research-based plan for independent study. The recommended period of time is 2 weeks. The plan has six parts, which are discussed below.

Part 1: Preparation (What is your passion?)

After a formal or informal preassessment, teacher and student meet to discuss options.

Option #1: Solve a problem based on the topic being investigated.

Option #2: Extension or more in-depth analysis of a topic being investigated.

Option #3: A creation or invention based on the topic being investigated.

After choosing an option, the student reviews the ground rules.

Ground rules:

1. Student signs a learning contract.
2. A parent permission letter is sent home explaining the project.
3. Student works independently as stipulated by the contract.
4. Student keeps a notebook with a timeline, log of daily activities, resources used, sources cited, reflection sheets, and the like.
5. Ongoing communication method is set up with the teacher.

Recommended time: preplanning

Part 2: Planning (What's the plan?)

Prepare a plan of action:

1. Timeline—Organize your project by completion dates.
2. Rubric for scoring—Set up the standards for grading.
3. Choice of venue —Choose a product design for your presentation.

Set up and keep a notebook for activities:

1. Daily logs for activities completed.
2. Research pages and inserts.
3. Documentation pages for sources used.
4. Reflections, journal entries, and evaluation sheets.

Recommended time: 1 day

Appendix B
Rubric for Inventions Portfolio Project

	Expert/Problem	Notebook	Research	Invention	PowerPoint Presentation	Presentation	Portfolio
3	Expert field was very well-stated and proven. 3+ sufficient reasons for the need were given.	Notebook is neat and well-organized. All sections of the notebook are complete. All work logs are up-to-date.	Sources are very well-documented. Each century is researched and supports the topic well. Student is well-versed on the history of the topic.	Good proposal for this idea or invention. Design is well-thought out and designed. Poster is attractive and informative.	Slides were very attractive and orderly. Slides flowed well from one to the other. Slides were complete and informative.	Confident and enthusiastic. A consummate expert in his or her field. Convinced the audience of the need and importance of this invention.	All elements of the project were outstanding. Portfolio was complete and well-done.
2	Expert field was stated and proven. 2+ reasons were given for the problem.	Two of the above.	Two of the above.	Two of the above.	Two of the above.	Two of the above.	The portfolio package was a good overall effort.
1	Expert field was stated. Only one reason was given for the need.	One of the above.	One of the above.	One of the above.	One of the above	One of the above.	Portfolio was incomplete, not attractive, not well-organized.

Part 3: Probing
(What did you find?)

Time to do the research! Student is required to use at least 5 sources from the following three categories, and sources must be documented:

1. the Internet;
2. books, tapes, videos, movies, or texts; and
3. interviews, community, cultural, or mentor sources.

Recommended time: 3 days

Part 4: Product (What did you do?)

Put it all together.

1. Organize your research into a product (e.g., paper, poster, PowerPoint presentation, brochure, documentary).
2. Reflect on your own work.
   - Make a list of pros and cons for you to assess your progress.
   - What did I do well? What could be better?
   - Make any changes or additions as necessary.
3. Get peer/teacher/mentor feedback.

Recommended time: 2–3 days

Part 5: Presentation
(What do you want to say?)

Prepare to promote your product to an audience.

- Prepare a script
- Assemble all of the pieces of your presentation.
- Decide who your "audience" will be.
- Practice your presentation to a friend or small group.
- Get feedback.
- Refine and improve your presentation until you think it's great.

Recommended time: 1–2 days

Part 6: Portfolio (What do you have?)

Now you are ready for the final presentation to your teacher and audience. Be prepared to assemble and pass in *all* parts of your project:

1. notebook complete with daily logs, all research, and cited sources;
2. final product; and
3. reflection and evaluation sheets.

Recommended time: 1 day

Appendix C
Sample Interview Questions

1. How did you like doing an independent study?
2. Was it a familiar method of study? Have you ever participated in such a study?
3. Would you do an independent study project such as this one again? Why or why not?
4. How did you like choosing your own area of study? How important was it to have a choice?
5. Give some details of the pros and cons for a study like this.
6. How would you say this study affected you both personally and academically?
7. What would you (personally) like to change or do differently next time?
8. How are you feeling about your final portfolio?
9. Now that your work is finished, how are you feeling about yourself?
10. This is your chance to help make this a better experience for future students. What should be done differently for future studies?