

More than a Cluster: A Districts' Approach to Middle Years Gifted Education

NAGC 2012 Session #

Christine L. Abbot

Context

In 2009-10, a group of parents proposed a district gifted cluster classes in Coquitlam School District. The group had been working with a District Advisory Committee on supporting learning for students with exceptionalities. The parent group put a proposal before the Board of Education to pilot four classes for gifted middle level learners. In May 2010, the Board of Education approved the pilot and the first applications were sent out to all gifted learners in grade 5 & 6. The first Middle Aged Cluster Classes (MACC) enrolled students in September 2010. This was a significant shift in the delivery model of support and enrichment for gifted learners.

Coquitlam is a suburban school district in Greater Vancouver serving over 30,000 students. The MACC program has been located in school with declining enrolment. The school district has a gifted coordinator who has offered middle level enrichment opportunities for gifted learners across the district. Sessions were held every six weeks and offered students opportunities to pursue areas of talent or interest. Gifted learners had been clustered in mixed ability classrooms and teachers had been encouraged to participate in learning teams to develop skills in differentiated instruction and assessment.

The parent group identified that the clusters, often of 4-6 students, were not always beneficial because the students may not have shared common interests, abilities, maturity, experience, readiness or motivation. Trials of large clusters were tried, but presented various challenges for the teacher and students.

Research

"Cluster grouping is [when] identified gifted students at a grade level are assigned to one classroom with a teacher who has special training in how to teach gifted students. The other students in their assigned class are of mixed ability. Differentiated instructional opportunities allow gifted students to interact with their intellectual as well as their age peers. Through cluster grouping the intellectual, social, and emotional needs of the gifted students can be addressed."
Patricia A. Schuler, "Cluster Grouping Coast to Coast," [NRC G/T 1997 Winter Newsletter](#)

Curriculum for gifted students should encourage greater mental leaps and incorporate multi-faceted problems
(Tomlinson, 1996)

Principles that should direct the development of curriculum for gifted learners: emphasis on complex thinking skills; abstract concepts; advanced level content; interdisciplinary studies; blending of content, process, product; cooperative efforts between students and instructors (Renzulli, 1988).

When teachers do differentiate, they tend to adapt curriculum and instruction to meet the needs of struggling learners (Moon et al, 1995; Tomlinson, 1995b; Tomlinson et al., 1995) because of the belief that gifted kids will make it anyway

Positive results for ability grouping of academically talented students (Allen, 1991; Kulik & Kulik, 1992; Rogers, 1993)

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Model

- Student centred classrooms – students have the opportunity to collaborate with teachers on thematic / conceptual topics for units
- Homogeneous groupings for core academic subjects (Math, Science, English, Social Studies, French, Health & Career Education); heterogeneous groupings for exploratory classes (Art, Drama, Music, Home Economics, Wood Work, Computers) & PE
- Choice of product, process, content and learning environments based on readiness, learning preferences, interests, multiple intelligence
- Use of pre-assessment and formative assessment – students are given a cumulative pre-assessment for math in September and are not required to complete units that they have shown mastery of and formative assessment for each assignment through daily individual conferences or assessment
- Flexible groupings – students are grouped by ability in French and Math; by interest in Science and Socials; by readiness in Health and Career Education
- Opportunity for acceleration – Math and French programs are self-paced; students have the opportunity to enrol in French 10/11 and Math 10 online through a Distance Education program and complete the work within the gifted classroom in their middle school
- Varied instruction – whole group instruction, small group instruction, individual conferences or lessons
- Student input into assessment criteria – students will have the opportunity generate the criteria for rubrics for specific assignments or projects
- Learning contracts – for individual projects and for Passion Projects
- Informal cross grade peer tutoring
- Tiered assignments using Bloom's taxonomy and multiple intelligence - online literature circles using Edmodo.com and example of Earth Crust project
- Field trips & guest speakers

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Our Process - Why We Do What We Do

When we were starting out with two new groups of students in a new program, we asked the class to list questions they had about themselves, their community and the world. We invited them to share with a partner and had them make a combined list of the questions they shared in common and considered *must haves*. The partners formed a group of four and synthesized a list of top 10 questions combining and re-wording questions for their original lists. The top 10 lists were shared with the class and the class sorted the topics and identified the themes they would like to investigate.

Our themes: the economy & taxation; 2012 & apocalypse; world conflict & war; aliens; life changing events (children, marriage, death); fame & fortune; myths & fairy tales; schools (history, who invented & why); Technology (replacing books, flying cars, underwater living); the future; animal survival; world change; why do people enjoy sports; a changing Canada.

Then we took the themes and the prescribed learning outcome for middle school and started to look to connections. We sat a brainstormed and found ourselves working with three major themes: Being the Change; Sustainability; Conflict and Oppression.

In 2011-12 we explored sustainability. We started by looking at some of the impact we are having on the environment and the earth. Recycling, zero waste, trash free lunches, population and natural disasters were all topics that entered the discussion. We have watched episodes of "Trashopolis" and continued to talk about what changes we could make to alter the path we are on. During term one, every student researched an issue they were interested in. From their research students work to present a proposal about how they would like to see change. We had proposals on school compost, Green Team Club for the school, increasing recycling in our school, trash free lunches and cafeteria waste audits, school gardens, Bear Aware programs and walk to school programs.

In term two, we took a different approach to sustainability. We explored the sustainability of cultures and language through a literature study of the classics and a study of empires. Students are currently working on their empires projects and are studying cultural sustainability through expansion specifically Rome & domination, the British Empire & the New World, and Space. We also looked at the sustainability of food. We watched "The Future of Food" and began the discussion about where our food comes from and how it gets to our tables.

In term three, we looked at the Northern Gateway pipeline proposed by Enbridge. We examined the pros and cons and even had a mock 'National Energy Board Review' with representatives from each community along the pipeline. Students were in groups representing different stakeholders from the communities and presented whether or not they supported the proposal and the anticipated impacts on the community.

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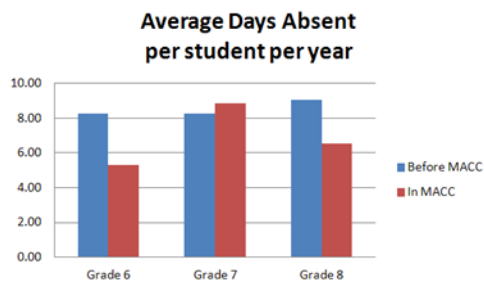
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The 5 C's that Gifted Learners Seek (based on research by Kanevsky & Keighley, 2003)

Control (through self- determination; power to change the situations):

- Formative assessment
 - Students complete an assessment at the beginning of units, classes to determine the amount of prior knowledge and areas for compacting or acceleration.
 - Students completed assessments in Math and French at the beginning of the year. Students were placed in groupings based on ability.
- Self-paced Math
 - If mastery was demonstrated on topics in math, the students' curriculum was compacted to reflect their learning needs.
 - Students work at their own pace to complete math. They sign up for math tests and participate in math tutorials and small group instruction.
- French classes levelled by ability at Hillcrest
- Opportunities for autonomous learning and choice
 - Students are provided with the choice of how they demonstrate learning (product), how they learn the information (process) and the determination of content
- Improved attendance



Attendance data did not account for the type of absences therefore includes illness, medical/dental appointments and vacations.

Anecdotal evidence showed that 12 students from one of the sites had consistently been absent for 20+ days per year. Since enrolling in MACC, their attendance is now at or below the averages represented in the graph.

Choice (by having content tied to interests and tied to the real world; higher level thinking processes, hands on activities with authentic materials, quick pace with minimum repetition; learning environment with flexible attendance and work pace):

- Planning process – students were facilitated through a process where they brainstormed concerns and interests about the world/country, province/community and in their personal life. The students clustered the topics and identified common themes. Teachers made connections to the prescribed learning outcomes and an outline for the curriculum at Hillcrest evolved.
- Every student has an IEP developed through goal setting with the students, parents and teachers
 - Communication with parents is essential and teachers have significant correspondence via email and average 2-3 parent/student meetings per year
- Blooms Taxonomy & Multiple Intelligence Tiered Assignments (e.g. Empires Project, Earth's Crust Project)
- Inquiry Based Learning

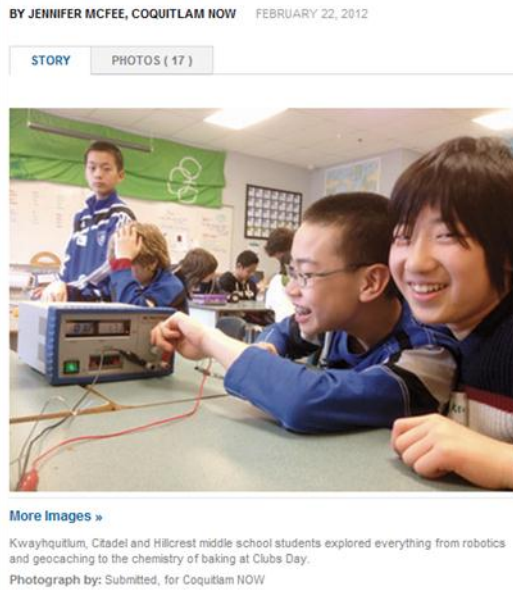
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Challenge (through an accelerated pace and a deeper more complex thinking):

- Passion Projects/Independent Directed Studies
- Clubs Day



CLUBS DAY INCLUDES EVERYTHING FROM MASKS TO BAKING

Students in the Middle Ages Cluster Classes at Kwayhquiltum, Citadel and Hillcrest middle schools tried their hands in different workshops for the recent Clubs Day.

This year, students are working on Passion Projects, so teachers offered workshops in their interest areas.

Full-day or half-day sessions included climbing at Cliffhanger, gymnastics at Club Aviva, and best Olympic moments and gym time at Hillcrest.

They could also opt to participate in workshops such as building motors and introduction to robotics, geocaching, chemistry of baking, making masks, authorship, rock school, drawing with light photography session, and flora and fauna.

- Field trips & Guest speakers
 - Students had the opportunity to participate in the Vancouver International Writer's Festival; Evergreen Cultural Centre Art programs; Math, Physics, Cosmology, Astronomy workshops at Simon Fraser University
 - Recreation trips: Snow-tubing and snowshoeing, Curling, Bowling, Swimming
- Open Ended assignments and projects

Complexity (crave the unfamiliar through novel, authentic, abstract, open-ended tasks):

- Clubs Day
- Passion Projects
 - Students at Citadel have published a book of their writing and it is available on lulu.com
 - Hillcrest students are blogging about many of their passion projects. You can view them at www.adventuresinmacc.edublogs.com
- Blooms & Multiple Intelligence Tiered Assignments
- Competitions (Math, Writing and Visual Arts)
 - Students have competed in various visual arts, math and writing competitions

Caring (caring teacher and adults in their lives):

- Socio-emotional development through Advisory and Health and Career Education
- Youth Worker groups social skill groups
- Social connections in classroom afterschool – space they want to be in
- Specialized programs for executive function and social-emotional development

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Reference List

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Resources in our classrooms

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Siegle, D. ["What Educators Need to Know About Ability Grouping"](#)

Tomlinson, C & Doubet, K. (2006) ["Smart in the Middle Grades: Classrooms that Work for Bright Middle Schoolers."](#) NMSA

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Sample Assignment – Earth Crust Project:

Key Concept	Linguistic / Logical-Mathematical	Visual-Spatial / Logical-Mathematical	Body-Kinaesthetic / Naturalist	Extension
#1. Compare the characteristics of the Earth's core, mantle and crust.	Develop an analogy to describe the layers of the Earth. Write a paragraph explaining your analogy to present to class / or teachers.	Create a 3-D puzzle that shows the characteristics of each layer of the Earth.	Create a model that represents the layers of atmosphere to the inner core of the Earth.	Create a rap / rhyme that includes information on the structure and function of the layers of the Earth. Choose a way to share your findings.
#2. Describe the formation of rocks.	Write about the rock cycle, include how rocks/minerals are made, how they can be identified or classified & identify commonly found rocks and local geographic formations.	Construct a flow chart to explain in detail the geological processes involved in forming rocks and minerals.	Create a catalogue of rock and mineral samples (include a detailed explanation of the formation of the catalogue items).	Explore a specific rock or mineral and its benefits & uses in our everyday lives. Choose a way to share your findings.
#3. Analyse the dynamics of tectonic plate movement and landmass formation.	Write about how earthquakes have helped scientists understand the Earth's structures.	Create a chart comparing the similarities and differences between volcanoes and earthquakes.	Create a model that demonstrates tectonic plate movement, including convergent, divergent & transform fault boundaries.	Compare the damage effects and response to earthquakes in different areas of the world. Determine whether the responses are equitable. Choose a way to share your findings.
#4. Explain how the Earth's surface changes over time.	Write about how scientists use the placement and position of an object to infer the time of events.	Create a poster or bulletin board display how fossils in sedimentary rock allow us to interpret ancient environments or how the fossil record is used to identify changes in life on and the surface of Earth.	Create and perform a news show (like Bill Nye) with props about how the Earth changes over time, how scientist can infer the time of events. Presentation can be recorded.	Predict how the Earth's surface will change over the next hundred, thousand, ten-thousand, million years. Choose a way to share your findings.

CRITERIA:

- Must complete **one** task for each key concept; please select tasks from at least 2 columns. (Extension tasks are considered more difficult and do not have to be done, though you will earn bonus marks!)
- Tasks may be completed on the computer. Presentations will be PowerPoint, glogster or prezi. For other forms of presentation please discuss with your teacher.

ASSESSMENT:

- After all tasks are collected, each student will be given 5 marks for the completion of each key concept, for a total of 20 marks.
- 2 tasks will be then be marked in detail – 1 task chosen by the student and 1 task chosen by the teacher on a lottery basis. Each of these tasks will be marked out of 15 for a total of 30 marks. Please submit this sheet with your completed tasks

DUE DATE : _____ **TOTAL PROJECT - 50 MARKS**

Assessment Completion of:

Task #1	/5
Task #2	/5
Task #3	/5
Task #4	/5

Detailed Assessment:

Student Choice	/15
(Task #____)	
Lottery Choice	/15
(Task #____)	

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Sample Assignment – Online Literature Circles (Edmodo):

The screenshot shows the Edmodo interface. At the top, there is a search bar and navigation links for Calendar, Grades, Library, Home, Profile, and Account. A sidebar on the left lists various groups and forums, including 'Literature Circles' with a list of books like 'A Long Way Gone', 'BE THE CHANGE reflections', 'Before We Were Free', 'Belly Up', 'Bifocal', 'Breadwinner', 'Flush', 'Free the Children', 'Half Brother', 'Hoot', 'I am Taxi', 'Iqbal', 'Roll of Thunder, Hear My Cry', 'Sacred Leaf', 'Scat', 'The Bite of the Mango', 'The Boy in the Dress', 'Three Cups of Tea', 'Three Wishes', and 'Touching Spirit Bear'. The main content area shows a post titled 'Literature Circle Final Assignment' with a 'Turned in (48)' status and a due date of 'Apr 16, 2011'. The assignment text reads: 'Using two of the books you have read over the literature circles unit, discuss the main theme of Be the Change. For possible discussion topics you can refer to changes in the characters, similar story lines, and/or long term impact on society. Any other change topics are possible too! If you have questions, ask us!! For ease of your readers, make it clear which books you are referring to and feel free to continue to use quotation references (although it is not mandatory as you may not have access to the books all of the time)'. Below this, there is a 'Week 5' section with a 'Turned in (51)' status and a due date of 'Mar 18, 2011'. The tasks for Week 5 are: 'Discuss posts made during week 1 - 4 (try to reply to at least 2 other responses)', 'Continue reading (you may continue with the same book or a new book)', and 'make your 5th discussion forum post on your book by March 18th'.

The screenshot shows a student's reflection on 'The Boy in the Dress' by David Walliams. The post is titled 'Matthew M. to BE THE CHANGE reflections (Literature Circles)' and is part of 'Literature Circle #6'. The student's reflection is written in several paragraphs. A starburst callout on the left side of the page says 'Writing developed from short paragraphs to essays'. The reflection text includes: 'Flush & Hoot- Both books written by the same author, and they all have a significant amount of change in the characters over the course of the story. Changes can be caused by a serious problem which forces the person to act differently; they can be caused by a family member in trouble, or even because of the change of another person. Most of the time in the book, over time the person does things different in a positive way and the changes are positive. But unfortunately, some changes can lead to some punitive even surprising consequences. A small change at the end of the book involved Kimberly Dixon. It might've been small but it was big enough to spark the conclusion of the story. "But I don't want to hurt your owls! Really, I wouldn't hurt a flea!" (p. 263) is What Kimberly says in question of the company she works for, that would bury the owls with their huge bulldozers. Unsurprisingly, Kimberly quit working for the Mother Paula's company because of that. The change this episode demonstrates is change from a secret. In this case the secret was that the company pretended that the owls weren't there so they could get on with their ground breaking. And this is the consequence. Kimberly quits working for the pancake company after being their important mascot for many years. The main character Roy changed the most throughout the story. His change was caused by another person in need, Mullet Fingers. "Did you see him too? The kid with no shoes?" clearly cited that Roy was interested in Mullet Fingers and the change was instantaneous. In fact, Roy was so into helping Mullet that he didn't even worry about his parents worrying about him. Roy went from thinking Florida was going to be just as boring as the rest of his homes, to being enthusiastic and willing to help someone. The consequence to this

Students were required to complete one written response per week. Students could choose to read one book or several books. Students were expected to post a response to a different question each week and engage in discussion about another students' written response.

Written Response Questions for "The Boy in the Dress" by David Walliams

1. There are several characters in the story. Are they archetypes? What do you think they add to the story? How do they support or discourage acceptance and self-expression?
2. Discuss the theme of celebrating our differences. Make reference to the novel and personal experience.
3. "The dress is a metaphor", the author insists. "It represents the colourful, creative, artistic, gentle, affectionate part of Dennis's life that disappeared when his mum left the family home." Can you accept what he says? Can you see the dress as just a symbol? Or do you disagree? How else might a character like Dennis express a hidden part of his life?

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Written Response Questions for "Belly Up" by Stuart Gibb

1. In today's society, the idea of being, meeting and knowing a celebrity is important. This novel subtly (or obviously depending on your opinion) addresses this issue in a variety of ways. Discuss the importance of celebrity to the novel.
2. We see a series of effective and ineffective relationships in the story, Teddy and his parents, Summer and her father, the zoo staff and each other as well as many others. Discuss how these relationships are for a couple of characters, both the good and the bad. Use quotes to support your answer.
3. Henry is an interesting mascot for the facility. Discuss the benefits and downfalls to having a mascot like Henry in a place like Fun Jungle. In your opinion, how has being in a zoo improved Henry's life?
4. Fun Jungle is considered a state of the art facility for animal care; it's more than a zoo. As a reader, you cannot help but think continually about the rights of animals in this facility. How does the author address both the benefits and the challenges with caring for animals in this 'zoo' setting? What do you think that author believes is an ideal way of caring for wild animals?

The screenshot shows a forum interface with a search bar, navigation tabs for 'Calendar', 'Grades', and 'Library', and a post titled 'Question: Be the Change Comparison'. The post text discusses the themes of 'Be the Change' and compares it to 'Flush' and 'Before We Were Free'. Below the text is a 'Show Full Post' button. A reply from Benjamin C. is visible, dated April 28, 2011, with a callout bubble pointing to it that says 'Feedback from a grade 7'.

Week 4 Assignment

Week four, our tasks are to

- Discuss posts made during week 1 - 3 (try to reply to at least 2 other responses)
- Continue reading (you may continue with the same book or a new book)
- make your 4th discussion forum post on your book by March 11th

You have from March 7-11 to make your post to the discussion forums about your book. Your 250-300 word essay post to the discussion forum is due by Friday morning at 8:00am. You will have Tuesday and Thursday afternoon to work on your responses and you will have access to the computer lab.

Here are our criteria for written work posted to the Forums:

- two or more paragraphs of thoughtful discussion of the topic (approx. 200 - 300 words) Note that an exceeding expectations on the BC Performance Standards in Writing is usually a longer post and is multi-paragraph (at least three paragraphs).
- specific reference to the text (detailed events and examples)
- at least one specific quotation with the page number
- reference to other students' comments in the discussion (except for the very first postings)
- proper grammar and strong writing (we recommend drafting in Word first so that you can use spell check and then copy and paste your response into the forum)
- avoid "reader response" - be sure to write in third person, rather than first or second person (don't use "I" or "you" as your subject). These are formal responses to literature; the convention is that the writer uses the more objective third person point of view.
- Your task is to provide ample evidence from the book to show your careful reading. Use persuasive writing strategies, but be sure to ground all your ideas about the topics in solid evidence from the text.

We encourage students to revise and re-submit their work. To resubmit and indicate that this latest submission is the one you want to have graded.

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Sample Assignment – Empire Project:

Key Concept	Linguistic	Visual-Spatial	Body-Kinaesthetic	Logical-Mathematical	Extension
#1. Social: belief system, language and people	Look at and discuss the role of language of the civilization. Explain written and oral traditions with examples of text and literature and defend whether oral tradition or written tradition is more sustainable (which tradition is likely to survive and preserve information?)	Look at the polytheistic civilizations and create trading cards for twelve of their gods. Tell us their name as well as information like parents, kids, what their the god of, role in society, how they were worshiped, etc)	Make a traditional meal for a civilization. Follow their number of courses. Take photos and choose a way to share your new food knowledge. Bring in samples.	Analyze the number system of a civilization that does not use base ten. Show it and break it down. Discuss the benefits and downfalls. Choose a way to share your findings.	Choose one influence or contribution of ancient society – imagine it did not exist. How would present-day culture be different? Choose a way to share your hypothesis and justification.
#2. Political: government systems and rulers of Rome	Explain the differences between the three Roman government systems: Empire, Republic and Kingdom. Tell us why the structures changed throughout the civilization. Explain why they wouldn't work in our Canadian society.	Create a political timeline of Ancient Rome. Include fifteen of its most influential leaders (at least three from each Kingdom, Empire and Republic). Give a brief biography of each leader, discussing their lasting impact and compare to a similar contemporary political leader?	Have a political debate with a classmate. Each of you play the role of one political leader. They can be from different time periods but you need to stay true to their ruling philosophies. Your debate will be video taped.	Using technology create a diagram to show the structure of the three Roman government systems: Empire, Republic and Kingdom. Identify the structures that influence or formed Canadian government structures.	Use Sketch Up to accurately create a political building in Ancient Rome. Discuss its significance to the civilization as well as its lasting impact.
#3. Economic: trade, expansion and money systems	Write an essay about the exploration and expansion of a civilization. Discuss the importance of the growth to the civilization. When did it start to become a problem? What happened next?	Create a map of Ancient Rome's trade routes. Discuss how it changed over the growth and challenges of the civilization.	Build a model that demonstrates trade routes/partners and expansion of a civilization. (Use of analogy is optional)	Compare the money systems of two civilizations. Discuss how they are similar and different from each other as well as how they differ from our dollar today. Which one would you choose? Why?	Compare the current economic crisis (Greece & Italy) to the Crisis of the Third Century. Identify some of the causes and discuss their effects. Choose a way to share your findings.
#4. Space Exploration:	Write about how the dimension of time could affect the exploration of space.	Create a timeline to illustrate the chronology of space exploration. Focus on 15 significant moments of your choice & explain them thoroughly.	Create and perform a news show (like Bill Nye) with props about the Canadian contributions to exploration technologies and consider how future technologies may	Predict how the discontinuation to the space shuttle program at NASA will impact the exploration of space. Analyze and report on the rationale for the decision. Express your opinion and justify your answer.	Compare the expansion of an ancient or modern country to the possible expansion into space in the future. How should history inform and guide future expansion?

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			<p>affect them. Or as a court scene where you defend a position with respect to the ethical</p> <p>considerations involved in the development and use of new technologies for exploration.</p>		
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