A learning-based approach to curriculum differentiation for gifted and talented learners

John Munro

The problem

The problem facing teachers and schools

How to implement effective teaching that takes account of how gifted and talented students learn?
Knowledge needed to deal with problem

How do these students learn?  What does gifted knowledge look like in regular classrooms?

To approach this problem

How to map gifted learning into effective teaching-learning interactions?  How to use what is known to develop a teaching friendly approach to pedagogy?

This present approach

A learning framework that is based on enhancing knowledge

Use the learning framework to collates gifted and talented learner characteristics

Develop an integrated teaching-learning framework

Use classroom climate most likely to foster gifted learning
Who are the gifted history learners?

Does student learn only the taught content or does she/he raise questions not targeted by the teaching and make links with topics not mentioned by the teaching?

What is the high achievement ‘like’?

Does student show a depth of understanding not usually showed by peers at this level?

Who are the gifted history learners?

Did the student seem to learn by being ‘acted on’ by the teaching and rely on others to organise the teaching and pathway followed?

How active was the student in managing the learning independently?

Did the student seek to manage or direct aspects of the learning her/himself, often spontaneously and sometimes incidentally?
<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Who are the gifted history learners?</td>
<td></td>
</tr>
<tr>
<td>Who decided the student would learn them; her / himself or others?</td>
<td>Who decided the student would learn them; her / himself or others?</td>
</tr>
<tr>
<td>Where did the motivation to learn the ideas come from?</td>
<td>Where did the motivation to learn the ideas come from?</td>
</tr>
<tr>
<td>Does the student learn the ideas because they expected / required to</td>
<td>Does the student learn the ideas because they expected / required to or does the</td>
</tr>
<tr>
<td>or does the student seek to learn the ideas her / himself, often</td>
<td>student seek to learn the ideas her / himself, often spontaneously and sometimes</td>
</tr>
<tr>
<td>spontaneously and sometimes incidentally?</td>
<td>incidentally?</td>
</tr>
<tr>
<td>How does the student use the knowledge?</td>
<td>How does the student use the knowledge?</td>
</tr>
<tr>
<td>Does the student transfer spontaneously the ideas to other situations</td>
<td>Does the student transfer spontaneously the ideas to other situations not mentioned by</td>
</tr>
<tr>
<td>not mentioned by the teaching, the ideas?</td>
<td>the teaching, the ideas?</td>
</tr>
</tbody>
</table>
Three categories of high achievement

**Able, bright history learners**
- learn the history taught at a high level.
- find it easy to learn when they are taught but do not initiate the learning.
- may not spontaneously link new topics with ideas they had been taught but can make these links easily when cued.
- usually do not transfer their history knowledge without being taught.
- ‘easily programmed’ by the teaching.

**Talented history learners**
- learn the history taught at high level.
- find it easy to learn when they are taught but don’t initiate the learning.
- transfer their knowledge to other situations, usually similar without being taught.
- ask questions that suggest they look at the ideas from perspectives that had not been taught directly.

**Gifted history learners**
- learn history at a high level, find it easy to learn.
- learn the ideas not because they are taught but due to intrinsic interest in history and pursue the knowledge spontaneously.
- initiate the learning; ‘self driven’ to know more about history;
- come to class having developed the knowledge you will teach.
- know ideas developmentally higher than what you would expect

Describing high achievement

**How broad is the high achievement?**

**How active was the student in managing the learning independently?**

**Profile of high achiever**

**Where did the motivation to learn the ideas come from?**

**How does the student use the knowledge?**

8/9/08
What is gifted knowledge like?

- link ideas in lateral, novel, unexpected ways,
- see connections quickly,
- infer, spontaneously ask complex questions

chunk information more efficiently, ‘put together’ more information into a ‘bites or chunk.

What is gifted knowledge like?

- multiple aspects of topic knowledge stimulated at once,
- use imagination or fantasy,
- show ‘intellectual playfulness’,
- keep track of several ideas at once,
- think in several directions

- ideas linked in richer, more elaborated and differentiated networks of meanings,
- a topic draws in a broader range of ideas and links with other areas more easily,
- broader understanding

The learning framework

The learning framework: journey through a topic

Learning starts with what the learner knows

The learner changes their knowledge

The learner consolidates, stores and applies new knowledge

8/9/08
Journey of a topic during learning

**What the learner knows**
- Challenge
- What will outcome look like?
- Know in experiences, language, actions
- Know how to learn
- Can I learn it well?

**The learner changes their knowledge**
- Learn topic in partial, context specific ways
- Learn more general patterns for topic?
- Link positive feelings with new ideas
- How did I learn?

**The learner reviews, stores and applies new knowledge**
- Review, store new ideas in memory.
- See progress being made
- Automatise the ideas
- Think creatively about ideas, transfer.
- Organize for display purposes.

Journey of a topic during learning

**Learning how fish breathe**

**Know in experiences, language, actions about breathing and fish**
- Know how to learn science ideas
- Do I believe I can learn science ideas well?

**Learn how fish breathe**
- Learn about fish breathing in partial, context specific ways
- Learn that most fish breathe using fills
- Link positive feelings with learning the new ideas
- How did I learn?

**Review, store new ideas about how fish breathe in memory.**
- See progress being made
- Automatise how fish breathe
- Think creatively about ideas, transfer.
- Organize for display purposes.
Learning framework for gifted learners

<table>
<thead>
<tr>
<th>learning action</th>
<th>How do gifted learners do it?</th>
</tr>
</thead>
<tbody>
<tr>
<td>a challenge or reason for learning</td>
<td></td>
</tr>
<tr>
<td>vision of the outcomes/ goals of learning</td>
<td></td>
</tr>
<tr>
<td>use existing knowledge</td>
<td></td>
</tr>
<tr>
<td>see a pathway to the goal</td>
<td></td>
</tr>
<tr>
<td>learn new ideas in specific contexts</td>
<td></td>
</tr>
<tr>
<td>abstract, decontextualise what they have learnt</td>
<td></td>
</tr>
<tr>
<td>invest positive emotion in new knowledge</td>
<td></td>
</tr>
<tr>
<td>store what they have learnt in memory</td>
<td></td>
</tr>
<tr>
<td>identify how they learnt</td>
<td></td>
</tr>
<tr>
<td>see progress being made</td>
<td></td>
</tr>
<tr>
<td>automatise what they have learnt</td>
<td></td>
</tr>
<tr>
<td>transfer, apply, generalize the new knowledge</td>
<td></td>
</tr>
</tbody>
</table>

What does the research tell us about how gifted students use each learning action during knowledge enhancement?

How gifted students learn: Challenge to learn

G&TSs learn well by having their knowledge challenged, by being able to frame up questions that they pursue.

G&TSs are more likely to show intrinsic motivation to learn. They resist extrinsic motivational orientations.

A challenge or reason for learning

G&TSs likely to show deep motives for learning, want to 'take ideas apart', question and extend them by linking with what they know. They resist learning for superficial or achieving motives.

G&TSs may be more difficult to motivate to learn ideas in areas that don't interest them initially.
How gifted students learn: Vision of outcome

G&TSs learn well by seeing what the outcome will be like, have a vision of the issue

Vision of the outcomes of learning
form an impression of where they will end up, see their goals

G&TSs see where they are on their 'journey' through a history topic, where what they are learning fits in and where they are going next.

How gifted students learn: Use what they know

G&TSs are curious, good at questioning a topic or the ideas they will learn.

G&TSs may set unrealistically high standards and goals for themselves, self-evaluate and become self-critical.

G&TSs need to have the opportunity to recode what they know to match the teaching.

G&TSs can manage and direct aspects of the learning and what they more effectively

make links with and use what they know re topic

G&TSs : superior knowledge of topic that is better differentiated and elaborated in a range of forms:
• verbal, abstract
• imagery, experiential
• scientific-mathematical
• action procedural

G&TSs process information faster and more efficiently in short term memory to form more complex ideas.
How gifted students learn: the pathway

G&TSs form an impression of where they will end up, see their goals

see a pathway to the goal

G&TSs decide the information sources they might need, experts to contact

G&TSs decide the physical resources and materials they might need to research the issue or problem.

How gifted students learn: in specific ways

G&TSs learn idiosyncratically, not easily programmed externally, need to align what they know with the teaching.

G&TSs plan the path they might follow, the questions they will ask decide indicators of their movement along the path.

learn new ideas in specific ways and contexts

G&TSs
• think about ideas in different ways; intuitively, in imagery or action ways
• link, compare categorise and organize ideas at high level
• use analogy,
• look for cause-effect or consequences

G&TSs
• ask questions spontaneously How can I get from ..to ?
• think flexibly, tolerate ambiguity and unanswered questions.
• explore and trial possibilities, interpret issues as problems.

G&TSs
• use short term memory strategies better.
• use higher level strategies better.
• use metacognitive strategies better to guide learning.

G&TSs
• use short term memory strategies better.
• use higher level strategies better.
• use metacognitive strategies better to guide learning.

G&TSs
• think about ideas in different ways; intuitively, in imagery or action ways
• link, compare categorise and organize ideas at high level
• use analogy,
• look for cause-effect or consequences

G&TSs
• ask questions spontaneously How can I get from ..to ?
• think flexibly, tolerate ambiguity and unanswered questions.
• explore and trial possibilities, interpret issues as problems.

G&TSs
• use short term memory strategies better.
• use higher level strategies better.
• use metacognitive strategies better to guide learning.

G&TSs
• use short term memory strategies better.
• use higher level strategies better.
• use metacognitive strategies better to guide learning.
How gifted students learn: they look for patterns

<table>
<thead>
<tr>
<th>G&amp;TSs link multiple aspects of ideas spontaneously; link episodic, abstract, attitudinal and procedural aspects of idea</th>
<th>G&amp;TSs</th>
</tr>
</thead>
<tbody>
<tr>
<td>• review, consolidate what was learnt,</td>
<td></td>
</tr>
<tr>
<td>• decontextualize, summarize, organize, main/subordinate ideas.</td>
<td></td>
</tr>
</tbody>
</table>

Learn new ideas as patterns and generalisations across contexts

<table>
<thead>
<tr>
<th>G&amp;TSs</th>
</tr>
</thead>
<tbody>
<tr>
<td>• look at ideas from different perspectives ,</td>
</tr>
<tr>
<td>• elaborate and extend ideas through questioning,</td>
</tr>
<tr>
<td>• identify generalities and rules about a set of ideas</td>
</tr>
<tr>
<td>• link two or more patterns and infer possible trends</td>
</tr>
<tr>
<td>• predict possibilities and options</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>G&amp;TSs</th>
</tr>
</thead>
<tbody>
<tr>
<td>identify / infer attitudes, dispositions, moral and ethical perspectives with the topic</td>
</tr>
</tbody>
</table>

How gifted students learn: thinking strategies

G&TSs often use learning strategies spontaneously; they need to reflect on how they went about learning and to learn how to say how they learnt, the thinking strategies they used.

Reflect on how they learn the new ideas

G&TSs discuss how the learning strategies they used helped them to learn and when they might use these in the future.
How gifted students learn: invest emotion

G&Ts need to see that the new ideas answer their questions/solve the problems they framed.

G&Ts see that their learning activity led to the learning outcomes, that they were able to learn the ideas independently.

Respond emotionally to the new ideas they have learnt: gifted students often report being bored and disengaged from learning.

G&Ts link, positive emotion with the new ideas.

How gifted students learn: store new ideas in memory

G&Ts say the new ideas they have learnt as concisely as possible.

G&Ts say how they have changed what they already knew.

Store what they have learnt in memory: G & T students store knowledge easily but may not store it in a form that matches the conventional form.

G&Ts say how they might use the ideas in the future.
How gifted students learn: automatise new ideas

G&TSs automatise what they have learnt by looking for meaning patterns

G&TSs automatise rules they construct based on meaning rather than through being taught.

Many G&TSs don’t automatise what they have learnt by rote in meaning ways rather than through being taught rules.

G&Ts often have difficulty learning under timed conditions

How gifted students learn: transfer and generalize the new knowledge

G&TSs link aspects of the topic in novel, lateral, creative ways, for example, give unexpected responses to questions

G&TSs analyse the new knowledge from a range of perspectives.

link ideas in lateral, creative ways

G&TSs show far transfer and generalize the new knowledge far beyond the context in which it was taught

G&Ts explore how far it can be transferred, look for the ‘far transfer’ apply, generalize the ideas.

G&Ts use imagination, fantasy and humour at a high level, show ‘intellectual playfulness’, explore an idea in depth, debate or argue an issue.

generate spontaneously open-ended questions that explore alternatives
How gifted students learn: organize what they have learnt for assessment purposes

- G&TSs don’t align what they know with the tasks set and answering these but prefer to tell the examiner what they think the examiner should know.

- G&TSs respond to tasks in unexpected ways

Some G&TSs do not achieve high scores on assessment tasks

- G&Ts need to learn how to interpret the assessment tasks and decide what is required.

- G&Ts need to learn how to link what they know with the assessment tasks and decide what is required.

Mapping the gifted learning profiles into a teaching framework

- Gifted learning characteristics
- teaching framework
Teaching gifted students

Lead students to have a reason for learning, frame questions, or problems around the topic. Ask questions that help them analyse what they know and to suggest possibilities.

Suppose you were the leader of an expedition to Australia in the 18th century. What are some big problems you could face during the first few months of the settlement? What would be a plan for dealing with them?

We are going to learn about the early years in the European settlement of Australia. What questions can we ask about it?

When the First Fleet first arrived in Sydney, what do you think they would have looked for in selecting a place to settle?

Planning tool for challenging

Activity to challenge the knowledge of G&Ts, to frame up questions that they pursue.

Use activities that ask G&Ts to

- introduce new ideas as problems to be solved
- ask students to suggest questions the teaching might answer
- predict outcomes and then check them.
- use novelty.
- solve open-ended problems
- present ideas that don't fit / clash with what students know
- use fantasy and imagination.
Challenge context question: We often think that with progress we know more. We often hear comments like "What we know is increasing exponentially". Many ancient cultures survived for thousands of years. One example is the ancient Egyptian civilization. The Egyptians have used the waters of the River Nile for at least 4800 years longer than white Australians have used the River Murray.

What did this culture know that has allowed them to survive for so long and to use the water of the Nile so well?

Specific challenge questions: Look at these items. They are products of the ancient Egyptian civilization. What must the culture have known to make them?

Broad challenge questions: Did the ancient cultures know similar things or quite different things? In all of them people had similar needs. In order to continue to survive, the culture needed to know particular things and to solve particular problems. Did they do this in similar or different ways? Did they end up knowing similar or different things? To what extent did knowledge flow or move between them?
Teach gifted students to use what they know

- Give them a range of ways to show what they know, for example, draw a concept map.
- Give opportunity to use information faster and more efficiently and use this to plan their later learning activities.
- Help them deal with often making errors can help you learn, judging yourself harshly won’t help.

Ask students to identify what they know about the topic. Stimulate and collate their experiential, verbal, action and symbolic knowledge. Analyse its diversity or breadth, depth and novelty.

- Ask them to think examine/analyse what they know from different perspectives, to bring together information from multiple sources and to see novel and unexpected options.
- What don’t they know re topic?
- Put your curiosity into an enquiry.
- What questions can we ask about this? Which ones can you answer? What aren’t you sure of?
- Give open-ended problems; students frame questions and action plans for solving them.
- Give them time to think through ideas by themselves. Have them say what they will do to learn a topic.

Teach gifted students to learn in specific contexts

Teach G&TSs to
- think about ideas taught in specific contexts in several ways: verbally, intuitively, visualize, act them out.
- make concrete or visual models.

Teach G&TSs to
- ask their own questions re the topic, pursue possible answers. say their questions at any time,
- plan how they will use sources of information and pursue unanswered questions.

Teach G&TSs to
- use both global 'big picture' and analytic 'bits picture' thinking.
- think in larger jumps, use analogy, compare and categorise to link instances.
- use questions to suggest possible analogies.

Teach G&TSs to show what they know about the new ideas in a range of ways.

Teach G&TSs how to
- learn in more conventional ways,
- be structured or programmed by others in some contexts.

Teach G&TSs to
- manage and direct their learning, work at their pace,
- monitor progress and take necessary remedial action.
Teach gifted students to decontextualize ideas

Teach G&TSs to
• review, consolidate explicitly new ideas and integrate abstract, contextual procedural aspects.
• summarise the idea, suggest proposition for specific instances,
• organize ideas into main/subordinate ideas.
• discuss real world contexts in which they might use the ideas, imagine idea in particular contexts.
• express the new ideas in conventional ways.

Teach G&TSs to
• question the ideas:
• suggest questions the ideas answer.
• answer inferential questions, look for patterns.
• answer questions that ask them to generalize new ideas.

Teach G&TSs to
• explore how far new ideas can be transferred, applied and generalized, look at ideas from various angles, for example,
  • positive and negative aspects of the ideas;
  • how the ideas might be used in the future;
  • how ideas have changed what we know or do.
• use imagination, fantasy and humour.

Teaching gifted students

Teach G&TSs to discuss how the new ideas interest them, have increased their curiosity. They answer the questions How do you feel about ..? Did you find this interesting / boring to learn? What would make them more interesting?

Teach G&TSs to discuss the value / use of the new knowledge, how they could use the new ideas.

Invest positive emotion in the new knowledge

Lead G&TSs to discuss discuss how learning the ideas will help them along their journey.

Guide G&TSs to
• see that it was their ability that allowed them to learn the ideas at the level of complexity they,
• see they can successfully learn more about the topic.
• value themselves as learners, that it was what they did that led to them learning.
Teaching gifted students

**Identify how they learnt**

Many G&TSs learn rapidly in idiosyncratic ways, rather than being programmed to think. It is useful for them to reflect on how they went about learning.

Ask the G&TSs to identify the new ways of thinking they used to learn historical ideas, for example: What did you do to learn the new ideas? Did making a picture help? What have you learnt about how to learn?

Guide G&TSs to keep a record or diary of how they worked through the topic, say the thinking strategies such as visualising that worked for them, when they might use the strategies in the future, how they worked for them.

Ask the G&TSs to say what they have learnt about how to solve problems in history topics; What have they learnt about 'being historians'? What types of questions do historians ask? What types of knowledge do historians pursue?

The students use these as self-talk and say how they could apply these.

**G&TSSs store what they have learnt in memory**

Guide G&TSSs to say how they might use the ideas in the future and to practise remembering what they have learnt.

Ask the G&TSSs to say concisely the new ideas they have learnt. Say as briefly as you can what you know now about ……

Ask the G&TSSs to say how they have changed what they already knew. How is this different from what you already knew?
Teaching gifted students

Use activities in which the G&TSs
• review on how they are progressing to their goals,
• review the knowledge they have gained, the questions they can now answer,
• suggest the directions they can move in the future.

see themselves making progress
G&TSs frequently do not finish set tasks or assignments. Their thinking is easily distracted by interesting new diversions and they may not complete tasks and get the feedback that other peers do for task completion.

Ask G&TSs to monitor and record their journey so far through the topic/issue they are learning and show where they are now.

Teaching gifted students

Automatise what they have learnt
• many G&TSs automatise what they have learning ways rather than through being taught, often do not automatise ideas by rote.
• have them
  • review the links between ideas,
  • compress the ideas into a few ‘chunks’ of ledge.
  • summarize and re-summarize the ideas,
  • ating more complex links between the idea few ‘big ideas’ represent subordinate idea.
• identify the the meaning base or key concepts for the ideas.
• apply the linked ideas often, say them and use them gradually more widely.

automatize links
between ideas, for example, in quizzes, rapid exposure to ideas, draw network diagrams, concept trees of related ideas

speed up recalling
the ideas, using them, anticipate when to use them
Teaching gifted students

Transfer and generalize the new knowledge

Have the G&TSs link aspects of the topic in novel, lateral, creative ways, for example, give unexpected responses to questions.

Have the G&TSs analyze the new knowledge from a range of perspectives, for example, formulate higher order Bloom-type or de Bono 6 hats questions.

The G&TSs use imagination, irony, fantasy, ‘play intellectually with the ideas, debate or argue an issue to explore them in depth.

The G&TSs explore how far the new ideas can be transferred, applied, generalised. They can look for ‘far transfer’.

The G&TSs link ideas in lateral, creative ways, look for unexpected perspectives.

The G&TSs work on open-ended questions that explore alternatives. "What might we do here?" "What do you think will happen?"

Organize what they have learnt for assessment purposes

Some G&TSs do not achieve high scores on assessment tasks. They sometimes don’t align what they know with the set tasks and answer them. Instead they prefer to tell the examiner what they think the examiner should know.

Have them decide how they will display their knowledge. Give them functional ways in which they can communicate their new knowledge.

Some G&TSs need to learn how best to show what they know in assessment formats.

G&TS work in small groups to

• write assessment questions, mock examinations for peers,
• practise recalling the ideas.

The G&TSs learn how to interpret conventional assessment tasks and plan how they will align their knowledge with the task.
How to link approach with dynamics of teaching, learning and classroom

To differentiate the teaching to accommodate G&TSs

• work on topic being taught to class as whole – use the topics in the SOSE text as a starting point. G &T students will interpret this differently from regular students. Provide ways for students to present their interpretations of the topic, their questions and validate these.

• elaborate the topic; develop an enquiry that allows these students to develop further the topic. G&TSs study the same content at different level of complexity and depth.

• differentiate the teaching.

• run enquiry in parallel with some of the regular classroom teaching.

• use procedures to identify the gifted history learners.

Identify the students who think about history in gifted ways

A few days before the teaching begins students collate and communicate what they know about the topic. They can
• visualize the topic,
• show what they know in a meaning concept map,
• write the questions they would like to ask about the topic.

We are going to look at how people lived in ancient cultures such as Greece or Rome. I would like to know what you already know about how people lived in those places.
To synthesize a G&TSs enquiry: Step 1

<table>
<thead>
<tr>
<th>Guideline for differentiating the topic for G&amp;TSs</th>
<th>Application to the history topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Analyse the topic that the regular students will be required to learn.</td>
<td>This topic requires students to learn about ancient and medieval societies and their role in providing the foundations of modern society. They explore key concepts of democracy, governance, the rule of law, justice, religion, liberty, authority, leadership, culture and feudalism.</td>
</tr>
</tbody>
</table>

To synthesize a G&TSs enquiry: Step 2

<table>
<thead>
<tr>
<th>Guideline for differentiating the topic for G&amp;TSs</th>
<th>Application to the history topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Identify more complex versions of the topic, for example</td>
<td>The regular class studies what ancient cultures did and how they lived. They must have known a lot to allow them to survive for thousands of years and to achieve what they did.</td>
</tr>
<tr>
<td>• Question one or more concepts that underpin or shape an idea or topic.</td>
<td></td>
</tr>
<tr>
<td>• Imagine / apply the ideas in different situations, at future times (whether they might be used / modified in the future) and have students make far transfer.</td>
<td></td>
</tr>
</tbody>
</table>
### To synthesize a G&TSs enquiry: Step 3

<table>
<thead>
<tr>
<th>Guideline for differentiating the topic for G&amp;TSs</th>
<th>Application to the history topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frame up challenge questions that relate to these ideas.</td>
<td>We often think that with progress we know more. We hear comments like “What we know is increasing exponentially”. Many ancient cultures survived for Thousands of years. Some continue today. What did these ancient cultures know that has allowed them to survive for so long?</td>
</tr>
<tr>
<td>Select questions that link to what the class is learning. Bring together two key ideas they need to learn.</td>
<td></td>
</tr>
<tr>
<td>Develop activities that encourage G&amp;TSs to</td>
<td></td>
</tr>
<tr>
<td>• be intrinsically motivated to learn.</td>
<td></td>
</tr>
<tr>
<td>• 'take ideas apart', question and extend them by linking with what they know.</td>
<td></td>
</tr>
</tbody>
</table>

### To synthesize a G&TSs enquiry: Step 4

<table>
<thead>
<tr>
<th>Guideline for differentiating the topic for G&amp;TSs</th>
<th>Application to the history topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Estimate / clarify what the gifted students may already know about the topic.</td>
<td>They know specific aspects of the Egyptian culture.</td>
</tr>
<tr>
<td>You may need to have a set of tasks to see how much of the content you will teach to the class as a whole is already known by the G&amp;TSs students.</td>
<td></td>
</tr>
</tbody>
</table>
To synthesize a G&TSs enquiry:Step 5

<table>
<thead>
<tr>
<th>Guideline for differentiating the topic for G&amp;TSs</th>
<th>Application to the history topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Develop the idea initially in particular contexts first by unpacking the concept. Set up the activities so that students can research, analyse and evaluate each idea, make links with what they know. Use activities that allow G&amp;TSs to think</td>
<td>Select a particular aspect of the ancient Egyptian culture, for example, how the culture Communicated or how it used technology. Students describe and analyse (1) The Rosetta Stone, Narmer’s Palette and the development of hieroglyphics.</td>
</tr>
<tr>
<td>• creatively, to be intuitive, think in possibilities, speculate, predict,</td>
<td></td>
</tr>
<tr>
<td>• critically, to evaluate new ideas in terms of what they already know,</td>
<td></td>
</tr>
<tr>
<td>• logically, using their knowledge of the topic,</td>
<td></td>
</tr>
<tr>
<td>• by problem solving, decide how they might trial a set of ideas, reflect on their trialing, gather data</td>
<td></td>
</tr>
<tr>
<td>• in terms of their purpose, unanswered questions</td>
<td></td>
</tr>
<tr>
<td>• by generalising, transferring, synthesizing.</td>
<td></td>
</tr>
</tbody>
</table>

To synthesize a G&TSs enquiry:Step 6

<table>
<thead>
<tr>
<th>Guideline for differentiating the topic for G&amp;TSs</th>
<th>Application to the history topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Synthesise their new understanding. Use activities in which students</td>
<td></td>
</tr>
<tr>
<td>• identify and talk about shared patterns, generalize, look for rules and why they work</td>
<td></td>
</tr>
<tr>
<td>• synthesise, draw together or integrate aspects of the new ideas into a ‘big picture’.</td>
<td></td>
</tr>
<tr>
<td>Draw the principles together into a body of knowledge</td>
<td>Analyse the use of symbolism to communicate in the Egyptian culture. How did people learn to read the hieroglyphics. Compare patterns with other early languages.</td>
</tr>
</tbody>
</table>
To synthesize a G&TSs enquiry: Step 7

<table>
<thead>
<tr>
<th>Guideline for differentiating the topic for G&amp;TSs</th>
<th>Application to the history topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Throughout the sequence use tasks that</td>
<td>To what extent do the tasks allow</td>
</tr>
<tr>
<td>• have a balance between tasks that allow both convergent and divergent thinking.</td>
<td>both convergent and divergent thinking?</td>
</tr>
<tr>
<td>• are unusual in various ways and lead to unexpected outcomes</td>
<td>unexpected outcomes?</td>
</tr>
<tr>
<td>• allow intrinsically motivated activity</td>
<td>intrinsically motivated activity?</td>
</tr>
<tr>
<td>• allow high task commitment</td>
<td>high task commitment?</td>
</tr>
<tr>
<td>• draw in various aspects of history knowledge</td>
<td>a high level of student initiative?</td>
</tr>
<tr>
<td>8/9/08</td>
<td>various areas of history knowledge?</td>
</tr>
<tr>
<td></td>
<td>creative / intuitive/divergent thinking about history ideas?</td>
</tr>
</tbody>
</table>

Analyse the components of the content

<table>
<thead>
<tr>
<th></th>
<th>Egypt</th>
<th>Rome</th>
<th>China /indigenous</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paradox</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Literal understanding of key ideas</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Identify patterns in the ideas</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Identify / infer possible trends between two or more patterns</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Generate possibilities, unknown ideas and patterns from what is known</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Identify the generalities, rules about topic</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Identify / infer ethical issues re topic</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Consolidate, integrate for one culture, predict</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Identify / infer big ideas: examine the rules across cultures, times, contexts. Predict into future.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Link big ideas with broader body of knowledge</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

8/9/08 52
Unpack the conceptual components

Key components of each culture:
- Religion
- Communication
- Technology
- Daily life
- Education
- Governance, Human values and freedom

Teaching-learning plan

For one culture provide a learning pathway that guides the students’ thinking in appropriate ways through each component: guiding questions + detailed subordinate questions for Communication in Egypt.

For second culture provide guiding question pathway - Communication in Rome.

Students draw out similarities and differences and infer their causes. They generate implications / predictions for third culture and investigate these.

Students draw out their findings re the knowledge that underpinned ancient cultures and the implications of this knowledge for our culture.

Students’ output assessed re knowledge generated, the transfer of appropriate research skills and the capacity to make links between cultures.
Analyse the components of the content

<table>
<thead>
<tr>
<th></th>
<th>Egypt</th>
<th>Rome</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paradox</td>
<td>commnic</td>
<td>technol</td>
</tr>
<tr>
<td>Literal understanding of key ideas</td>
<td>religion</td>
<td>commun</td>
</tr>
<tr>
<td>Identify patterns in the ideas</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Identify / infer possible trends</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Generate possibilities, unknown ideas</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Identify the generalities, rules about topic</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Identify / infer ethical issues re topic</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Consolidate, integrate for one culture, predict</td>
<td>synthesize re question : What was known in ancient Egypt?</td>
<td>What was known in ancient Rome?</td>
</tr>
<tr>
<td>Review how they learnt about the topic</td>
<td>What are key questions I asked re Egypt? What ways of thinking helped me?</td>
<td>Develop self direction.</td>
</tr>
<tr>
<td>Identify / infer big ideas + predict future.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Link big ideas with broader knowledge</td>
<td>55</td>
<td>55</td>
</tr>
</tbody>
</table>

Possible future developments

Build a ‘professional learning community’ across the SEAL schools that has a focus on improving gifted education provision in Years 7-10 through enhanced community knowledge by examining several issues

1. Use the learning – teaching proforma to develop teaching-learning units that take account of how G & T students learn topics in regular classroom.

2. Develop and validate an effective gifted rating scale similar to GRS for use in secondary schools.

3. How to help teachers understand G & T learning and how to use relevant teaching, how to give learning feedback. Train a group of teachers to be ‘leaders of professional learning gifted education provision.

4. Options for G & T students to use the knowledge they have gained, how to collate and use the knowledge of G & T students in classroom, community.
Possible future developments

5. Opportunity for G & T students from two or more schools to come together to build knowledge of common topics.

6. Pooling ‘professional learning community’ knowledge on a web site and developing an action research agenda.


8. How can each school benefit optimally from its G & T students, eg., how to use talented knowledge in VCE, how to develop relevant leadership roles in schools.

9. Procedures for measuring various aspects of gifted learning