

1C

**Roman medical ability: how pupils perceive medicine in the ancient
world.**

(8002 words)

Introduction

I shall begin with a quote from Plato's Meno.

Σωκράτης
...ἀλλά μοι προσκάλεσον τῶν πολλῶν

[82β] ἀκολουθῶν τουτωνὶ τῶν σαυτοῦ
ἕνα, ὅντινα βούλει, ἵνα ἐν τούτῳ σοι
ἐπιδείξωμαι.

Μένων
πάνυ γε. δεῦρο πρόσελθε.

Σωκράτης
Ἕλληνα μὲν ἐστὶ καὶ ἐλληνίζει;

Μένων
πάνυ γε σφόδρα, οἰκογενῆς γε.

Σωκράτης
πρόσεχε δὴ τὸν νοῦν ὁπότερ' ἂν σοι
φαίνεται, ἢ ἀναμνησκόμενος ἢ
μανθάνων παρ' ἐμοῦ.

Μένων
ἀλλὰ προσέξω.

Socrates
...Just call one of your own troop of
attendants there,
[82b] whichever one you please, that
he may serve for my demonstration.

Meno
Certainly. You, I say, come here.

Socrates
He is a Greek, I suppose, and speaks
Greek?

Meno
Oh yes, to be sure—born in the house.

Socrates
Now observe closely whether he
strikes you as recollecting or as
learning from me.

Meno
I will.

Plato

Lamb (1967)

The Question

Anecdotal evidence I have collected through discourse with current Classics teachers suggests that the majority of Key Stage (KS) 3 pupils regard the Ancient Greeks and Romans as having technological capabilities one step up from Stone Age man. In this assignment I will discuss how pupils perceive the medical capabilities of the Romans both before and after studying stage twenty of the Cambridge Latin Course (CLC). I investigated how the language and civilisation elements of the CLC contribute to pupils' understanding of the Romans' medical capability. I did this through the comparison of pupils' perceptions of Roman medicine before and after studying stage twenty. I also considered how the activities completed in class and for homework contributed to the pupils' learning. I hoped to obtain from this investigation an understanding as to whether or not pupils really do underestimate the scientific capabilities of the Romans. Similarly, I wished to gain a better understanding of how each element in the stage contributed to pupils' perceptions and whether or not the stage taken as a whole influences pupils' understanding.

In the course of this investigation I planned to answer the following questions:

- 1) What sorts of preconceptions do pupils have about the Roman world?
- 2) Do pupils associate medicine and science?
- 3) Would a change in perception of one lead to a change in perception about the other?
- 4) What sources influenced pupils' perceptions before and during the stage's study? In particular, were they reliable?

- 5) Were there activities, such as those involving ICT and eLearning, that had a greater impact on pupils' understanding than others?
- 6) Do pupils seek additional information outside class?

By studying Roman medicine the pupil is exposed to an area of the national curriculum beyond the normal subject boundaries; that of cultural development (Gay, 2003). Medicine is an area that all pupils will have some degree of understanding about, having had previous medical experiences ranging from minor complaints such as having a cold, to more serious experiences involving hospital treatments. If pupils have not experienced this directly, they are very likely to know of someone who has. In short, it is a topic they can relate to and as such they are more likely to have complex ideas relating to it. The correction of the "primitive Roman" perception means pupils learn transferable principles about cultural development. For example, a culture that has less technology at its disposal is not necessarily incapable of achieving similar feats to our own. This digital generation's exposure to Information and Communications Technology (ICT) from an early age means that our pupils are likely to have little comprehension of a digital-free culture. One can say that the concept of the Roman Empire is too remote for pupils who form judgements based on their sociological experience, as Husbands and Pendry (2000) found with the concept of the sixteenth century. By studying this stage, pupils fill this knowledge gap through the more accessible historical context of medicine.

Similarly, focusing on medicine rather than science means that pupils are not exposed to the ridiculous notion of ancient peoples interacting with aliens, a sensationalist idea currently given far too much coverage in the media.

The School

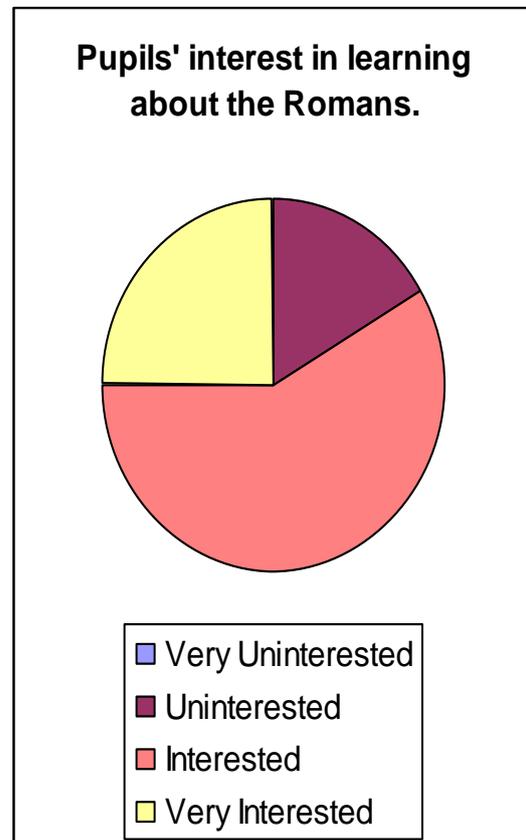
The research that forms the foundation of this assignment took place at a non-denominational Independent day School for girls located in the heart of Birmingham. Founded in the late nineteenth century with the goal of providing “a challenging liberal education” for its pupils, the school caters for approximately 950 girls aged from two-and-a-half to 18 years. Being considered to be one of Birmingham’s best schools by parents and having about half of its preparatory pupils proceed into the senior school; competition to get into the school is fierce. The last Independent Schools’ Inspectorate (ISI) report indicates that the school’s pupils achieve well above the national average for maintained secondary schools in their standardised testing and public examinations across the three departments. The report also noted the small number of pupils in the senior school for whom English was an additional language; that there were approximately 30 children identified as having Learning Difficulties and/or Disabilities (LDD) and that only one pupil had a statement of Special Educational Needs (SEN). For the purpose of this assignment, I shall refer to the school as ABC.

The Class

The class has forty-three lessons a week in total, each lasting thirty-five minutes. Of these only two are dedicated to Latin in Year 9. Latin is

compulsory until Year 9 when pupils choose which subjects to continue at GCSE level. Prior to this, pupils had two lessons a week in Years 7 and 8.

When asked, more than half of the twelve pupils involved in the study considered themselves to be interested in learning about the Romans, with an additional quarter considering themselves to be very interested. It is worthwhile to note that half a dozen pupils, including those whose questionnaires had to be excluded for reasons of incompleteness, remarked that they were less interested in the linguistic aspect of the course.



Similarly, that the pupils had by this point in the academic year already made their GCSE options choices. At the time of writing, six pupils from this class of nineteen chose to continue with Latin next year.

Literature Review

The American Psychologist Jerome Bruner (1986) does not agree with the notion of a gradually waning egocentric developmental process for a child. He disputes the tenet within it of unmediated conceptualism in which the learner, or child gradually builds up a picture of the world through direct encounters with natural states, and that interaction and negotiation with others is a negligible factor to learning. Bruner feels that mediation between these natural states and the individual through interaction and negotiation with others is instead a fundamental truth that supports Vgotsky's theory of the Zone of Proximal Development. This theory proposes that the more competent mediate with the world on behalf of the less competent and young in order to support their learning. As a result the young and less competent then reach a more developed understanding of concepts that enables them to utilise more abstract thought.

Vgotsky's theory introduced the notion that children learn by utilising perception, speech and action simultaneously; language is the medium in which they order their thoughts (as explained in Bruner 1986). More advanced concepts transform the meaning of more basic ones; Vgotsky's example being that of a pupil having mastered algebra then having a fresher understanding of arithmetic as a result. In Classical terms, this means that the pupil who has mastered fearing clauses has gained a more developed appreciation of the nuances behind the words "ut" and "ne", which, non-specialists need to know have a different meanings when accompanied by a verb of petition, or qualifiers such as "*tot*" which means "so much" or "*tantus*"

which means “so many”. In this instance, the basic principle of vocabulary is developed by the more advanced principle of grammar.

Returning once more to Bruner, “when we are puzzled about what we encounter, we renegotiate its meaning in a manner that is concordant with what those around us believe” (1986). This constant renegotiation and reinterpretation means, Bruner suggests that a culture’s paradigm of beliefs is in a state of constant recreation as it is interpreted by its members. Occasions such as telling a story and institutions such as science serve as a focal point of reinterpretation and renegotiation arising out of need. According to Bruner, education is one of the key forums for this, since teachers can present a topic to a class for the sake of reinterpretation and negotiation. By inviting pupils to interact with a topic in this way, the teacher enables pupils to distance themselves from what they already know in order to reflect on it. This means that pupils are the agents of knowledge, knowledge which they will then reconsider and reevaluate, at the same time as they are the recipients of knowledge.

Bruner (1986) describes the young as being “underequipped with knowledge about the world [and] ‘lacking’ in values” and identifies the need for this information to be imparted to them. Robin Conway, a history teacher in a secondary comprehensive in Oxfordshire, agrees. Whilst acknowledging that research into the area of pupil preconceptions is sparse, he feels that part of a teacher’s role in education is to work with pupils’ existing preconceptions in order to check and restructure them, generating new ones in the process

(2006). Husbands, a Professor of Education at Warwick and Pendry, a Lecturer in Educational Studies at Oxford (2000) share this opinion, identifying a “well-established research tradition” in which pupils’ ability to understand new knowledge is closely dependent on their *a priori* knowledge; on their preconceived image of the world. All learners “negotiate a settlement between what they already understand about the world... the material that their teachers require them to master, and the tasks and products that provide vehicles for this mastery” (Husbands & Pendry, 2000). As a consequence there is a need for educators to mediate between history and their pupils to address the understanding that pupils have an immature and insecure picture of the world.

In his small and informal study of the impact of Year 8 pupils’ preconceptions on their understanding of historical significance, Conway (2006) highlights that there are many influencing factors that shape preconceptions. Pupils’ pre-existing beliefs, attitudes and knowledge; with regard to the topic, subject and in about more general terms such as the definition of “importance”; whether these are accurate or not, all influence pupils’ preconceptions. When observing an upper ability Year 8 class which was asked to write an historical account of 16th Century religion, Husbands and Pendry (2000) found that the political and religious issues were coloured by the pupils’ beliefs, attitudes, emotions and personal issues. As a result of projecting their own limited experiences onto past events, pupils missed the fact that people in the past had different beliefs, attitudes, emotions and personal issues to them. Pupils had genuine difficulties understanding political and religious history, a state of

affairs partly influenced by the fact that the pupils were being asked to empathise with the past and the behaviour of adults.

This need to empathise with past adults' behaviour stemmed from Her Majesty's Inspectorate, (HMI), who in 1985 wrote of a need for pupils to be able draw on a range of perspectives for detailed contextual knowledge. HMI also identified the need for pupils to have the capacity to project themselves into the past, in order to obtain an "informed appreciation" of a past people's predicaments and points of view. Pupils' emotional maturity underpins this concept (Husbands & Pendry, 2000), since the more mature pupil uses more sophisticated reasoning to make sense of the world around them.

In my opinion, it is when one or more of the elements that form a pupil's *a priori* knowledge are inaccurate that pupils' preconceptions become misconceptions. Conway (2006) suggests that pupils' deeper-set misconceptions could be based on inaccurate information that fails to be challenged throughout their educational careers. Husbands and Pendry seem to support his opinion by arguing for the need to address pupils' beliefs, attitudes, emotions and personal issues for a further enhancement of historical understanding. One method of doing this is through the use of contemporary analogy, though this may not be as helpful as one may initially think. Whilst there are similarities between ancient and modern tongue depressors, for example, I found that pupils mistook the spoon-shaped instrument for a scooping device, suggesting that this particular comparison was more of a confusing red-herring.

When discussing the need for history departments to show the relevance of studying the subject beyond Year 9, Martin Hunt a part-time PGCE History lecturer reasons that:

the assessment of the significance of events, changes and people in the past not only deepened pupils' understanding of the world, in which they live, but also helps them to consider the ageless social, moral and cultural issues, which adolescents see as being very relevant.

(2000, p.39)

The same sentiment can be seen in Classics. Lynn Gordon, the Head of Classics at the Oakham School, writes of a need to show our sixth-form pupils the viability of studying classical subjects beyond A level, stating that few professions actually require a specific degree at the point of entry (2010). Medicine is understandably one of her exceptions, however anecdotal evidence I have gathered from acquaintances in the medical profession indicate that a solid grounding in Latin or Greek results in the medical student spending less time learning terms derived from a language they are already familiar with. Peter Geall, the Head of Classics at King Henry VIII School in Coventry gives similar reasons when selling Classics to pupils and parents he feels are short-sightedly overlooking the longer-term implications of an education in the Classics (2009). He also writes about the need to sell Latin at Key Stages three and four and suggests numerous methods of doing so, predominantly through fun, games and trips (2009). Selling Classical

subjects in this way, by focusing on the cultural and historical elements through trips is supported by Eileen Emmett's research (2009). This suggests that forty-six percent of the Year 9 Latin pupils she surveyed about Latin as an option choice enjoyed the cultural and historical elements more than its linguistic element. Emmett's research appears to demonstrate a need both to sell the Latin and ties in with my own findings about my own pupils' enthusiasms being largely for the cultural aspects, as I mentioned earlier.

Gordon (2010) suggests that giving pupils access and say in the sorts of supplementary subject-related literature available in their school library gives them a greater sense of ownership of the subject and as a result a stronger interest. Subject-related literature such as Caroline Lawrence's Roman mystery series (Lawrence, 2010), has been key to "breathing new life into our perceptions of the ancient world" (Ashdowne, 2010). Ruth Downie's *Medicus* series about a cynical Roman doctor stationed in Britain is particularly relevant to the content of stage 20. Ashdowne (2010) writes that glossy-full colour text books and interactive websites have also contributed to this general change in the public's perception. Ashdowne (2010) suggests that the areas of overlap found in classical subjects with others in the national curriculum mean that non-subject specialist Latin teachers can find themselves in reassuringly familiar territory. Given that the majority of non-subject specialist teachers tend to be in the humanities and modern foreign languages branches, Stage 20's onus on science and medicine mean that this is a stage unlikely to contain such a familiar overlap.

To Gretta Mullany, this was where eLearning came in (2007). Being educated at a school without a specialist teacher meant that she was not considering taking Latin during Year 9. However, with the support of her non-specialist teachers, she was given the opportunity to learn Latin through eLearning and video-conferencing, gaining a GCSE and AS level before going on to study Classics at Oxford. Mullany credits eLearning with Nelson Thornes as her inspiration “to pursue [her] studies of Roman and Greek ancient history and literature.” (2007). The growth of the Cambridge School Classics Project’s website over the last eleven years seems to support Mullany’s perspective. Initially offering CLC book one to just two comprehensives, by March 2009 the CSCP was catering for “23 partnership schools... and 368 independent learners” and available in three other languages (Lister, 2010). Lister highlights how “the dramatic increase in the number of data projectors and interactive whiteboards in classrooms” (2007) has made it possible for a teacher to use a wider range of resources in their lesson. Certainly it is the case that at ABC, every classroom comes equipped with an interactive whiteboard and a desktop computer, facilitating the creation of a blended learning environment, in which traditional teaching is complemented by the integration of electronic and online resources (Lister, 2007). As of October 2009, the CSCP’s website had 100,000 hits on average each month (Lister, 2010). The electronic resources the website and its corresponding DVDs contain exercises drawn largely from the Independent Learning Manuals and Worksheet Masters, as well as vocabulary testers for each stage and “click-and-lookup’ versions of every story” (Lister, 2010) in

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books one to five. Lister (2007) also mentions how pupils can use ICT to
research their homework.

Methodology and Research Focus

One of the main aims of this action research was to obtain qualitative data over the course of four lessons that would enable the identification of the sorts of preconceptions pupils have about the Roman world by focusing on Roman medicine. I also wanted to know whether pupils associated medicine with science and whether a change in perspective for one would cause a change in the other. Finally, I was curious about the sources that influenced pupils' preconceptions both before the stage and during. Were the sources reliable? Did activities such as the eLearning resources Lister and Mullany praised have greater impact than others? Did pupils go out of their way to look up additional information outside class?

To this end, qualitative data about pupils' preconceptions was collected through the mediums of two questionnaires. The first, located in appendix one, was given to the class before they started stage twenty, just as they were completing the *venatio* story found in stage nineteen. The second, located in appendix two, was given to them at the end of the series of four lessons, when pupils were finishing the stage and topic by completing *astrologus victor*. Both questionnaires had been piloted in a lower ability Year 9 Latin class of a similar size in order to hone the questioning and layout prior to their presentation to the higher ability group. However the last minute addition to the second questionnaire of the final few questions was not piloted and I have since felt that these could have been much better phrased.

Instead of leading the class, I chose to be an observer in the classroom of an advanced Year 9 group who were beginning stage 20 of the CLC. This meant that I could listen to how pupils' approached their work in order to gain an understanding of how each activity contributed to the restructuring of pupils' preconceptions. This also served to further distance me from the class, who did not come to see me in the same light they see their class teacher. The positive effect of this was that it enabled me to limit the effect I had on their questionnaire responses, since this combined with reiteration that their responses would not be seen by either their normal class teacher or the head of department, meant pupils were more likely to be honest in their answers.

As well as completing the first questionnaire in the first of the four lessons, pupils also completed stage nineteen before beginning the model sentences for stage twenty. This served to introduce the theme of medicine, since the main character, Barbillus has been wounded whilst hunting and is in need of medical attention.

In the second lesson, the class teacher chose to continue the class' exploration of the topic through the translation of the *Remedium astrologi* story, in which an astrologer tries to cure Barbillus' wound by applying a diced mouse to the wound as a poultice. To make it more vivid and engaging for pupils she chose to accompany the act of translation with the viewing of a dramatisation of the story provided by the eLearning resources. This enabled pupils to see the action of the story, differentiating for those who may

have simply translated without necessarily following the content of the story. The class teacher then chose to build on the pupils' understanding of the civilisation aspect by playing a clip about Roman medicine also provided by the eLearning resource. This was further supported by the class reading out the civilisation notes. The teacher then chose to look at a list of eleven English medical terms with the class. Each word was taken in turn, and the teacher explained the origin of the word in either Greek or Latin. Words on the list included: anatomy, dissection, antiseptic, cautery, cadaver, anaesthetic, obstetrics, haematology, microscope, cancer and vaccination. This activity helped to show pupils the relevance of Latin and Greek in modern medicine and also served to sell the subject's legitimacy by demonstrating its utility to pupils.

The third lesson was interrupted by an unavoidable Synoptic Verb Test which formed part of the school's assessment and pupil monitoring process. After this was completed pupils watched another dramatisation from the eLearning resource, this time for the *Petro* story, in which the class learnt about "proper" doctors and medical treatments in the Roman Empire. After they had seen this dramatisation, they then answered the accompanying comprehension questions as a class. After they completed this activity, which I had felt would be the main cause that determined a change in their opinions of medical capability, I completed a focus group session with the class, in order to gauge whether or not I was correct in my initial assessment. The homework for this lesson involved pupils looking up the modern medical treatments for diseases and afflictions, and creating their own treatments for the same conditions as

though they were the Astrologer. This enabled pupils to gain a better understanding of modern medicine, and engage creatively with the topic. I fear that this particular activity may have encouraged pupils to maintain inaccurate beliefs, in that they were not encouraged to look up actual Roman cures in the same way they had with the modern.

The final session concluded with the administration of the final questionnaire to find out whether or not there had been a change in the pupils' opinions. Prior to this however, pupils looked at participles. This understandably took greater precedence than completing the *Astrologus victor* story, since the grammar point would be needed next year. Pupils as a result, did not quite complete the *Astrologus victor* sheets they were being asked to get through as a result. Please see appendix three for a summary of the four lessons. In order to gain further evidence to support or refute my own opinions, I took the opportunity to interview the class teacher after the stage had been taught in order to gather her perspective of class' learning. I wanted to find out if she and I had noticed similar points. I had made the class teacher aware of my intentions at each point in the research project and this interview enabled me to gain a better understanding into why she had chosen to use the activities that she had. Although the class teacher had not taught this particular stage before, indeed being relatively new to the CLC in general, I still felt that her experience in other stages would influence her methodology.

Of the class' nineteen pupils, I have focused on twelve who met the following criteria. Firstly, that they had completed both questionnaires meaning that

any changes in their preconceptions could be identified through the comparison of their perceptions before and after studying the stage. Secondly, pupils had handed in their books at the end of the stage, which meant that a further analysis of their work could take place to produce a more accurate interpretation of their questionnaire answers based on what they had done in class. The third criterion was that pupils had been present for a brief focus-group plenary activity in which the class was asked as a group about the effect of the *Petro* story. Finally pupils had been given the opportunity to opt out of a part of the research by ticking a box on the questionnaires. One pupil further indicated a reluctance to take part by refusing to complete her questionnaire. Consequently she was not compelled to take part in the research and her opinions were not tracked over the course of the four lessons.

Action research being traditionally associated with small-scale projects by individuals seeking to improve their practices (Denscombe, 1998) seemed to me to be a reasonable approach for this research. This approach was initially used to gain a better understanding of problems arising in everyday practice. Here, looking at the problem of pupil misconceptions resulting from inaccurate preconceptions. I have focused on the change in perspectives seen over the course of the stage, this focus again being another key feature of action research. Another benefit of action research is that it allows multiple methods of data collection to be utilised. Here I have supplemented the main questionnaires with pupils and teacher interviews as well as documentary analysis and direct observation in class.

My research differs from traditional action research in that it does not involve a cyclical process, in which an aspect is altered and the effect of the alteration in relation to the desired outcome measured before another aspect is altered (Denscombe, 1998) and the effect measured once again.

In my opinion, the main benefit of using questionnaires in this research is that it made the comparison of pupils' changing opinions easier. The fact that what I was trying to obtain was straightforward further affected the appropriateness of their use. In order to avoid the danger of subjective responses, I chose not to include questions asking pupils to assign a value to their opinions, instead asking pupils to tick specific boxes and give a short explanation as to why they did so. This has meant that I've been able to understand the reasoning behind pupils' answers.

Findings and Analysis

Were the sources that influenced pupils' preconceptions reliable? Did pupils go out of their way to look up the weird stuff?

Below is an analysis of the responses given by pupils when asked where else they have learnt information about the Romans from.

Horrible Histories – book	4
Horrible Histories – television	4
Chedworth	12
Cirencester Museum	9
Internet	1
Internet games	2
British Museum	2
Discovery channel	1
Dr Who – television	1
Biology textbook	1
Seven Wonders of the Ancient World – book	1

I was delighted to see that pupils had not gone and looked the really weird stuff up. By this I mean that I did not come across any references to aliens, something an OCR Principal Examiner mentioned to me when we were discussing past GCSE scripts, made by pupils who had been influenced by programmes broadcasted on the Discovery Channel. As we can see from this data, only one pupil mentioned the Discovery Channel in their list. The class tended to favour more mainstream programming for their age group that included programmes such as the Horrible Histories and Dr Who. Since both these programs are meant to entertain, they can influence pupils' preconceptions in a negative way. For example, the horrible histories focus on the extremes of history which can cause pupils to place a greater

emphasis on less pertinent information. This point applies to the books as well as the television series. Dr Who, is a work of fiction, and whilst it included many historical points, such as the household *lars*, pupils cannot always identify the aspects of such a program that are the result of creative license, such as the monsters living under the volcano.

It was interesting to note that pupils only referred to educational non-fiction books, including a biology textbook and another focusing on the seven wonders of the ancient world. Fictional works by authors such as Lawrence and Downie were not mentioned. Peculiar too, was the absence of cinematic influences such as the films Troy, Disney's Hercules, and Percy Jackson and the Lightning Thief. This would seem to suggest that pupils did not regard these to be sources of Classical information. However, it is as equally possible that they were influenced by the wording of the question or that they simply had not seen the films or read the books.

Pupils included museum trips in their answer to this question, since despite being on a school trip they considered the excursion to be outside of the classroom. It was very pleasing to see pupils recognising the British Museum as a source of information they had encountered, especially as this particular visit was not the result of a school trip with ABC. This suggests that pupils retain information and experiences from primary school which they continue to draw on when approaching the end of KS3. It would be interesting to find out whether or not pupils continue to do this at GCSE level too.

Finally, pupils also acknowledged the internet and internet games as sources of information they had used. What was most concerning about this response was the vagueness of the pupils who failed to give more specific information about the particular websites they would use. Again, there could be two reasons for this. The first involves poor wording in the question itself on my part, which led pupils to believe that stating “the internet” would in itself be a sufficient answer. The second involves the nature of pupils’ internet use, in which they may not necessarily be aware or able to recall the specifics of the websites they visit. Both cause concerns regarding the accuracy of information, or indeed level of information at all.

What sorts of preconceptions do pupils have about the Roman World when they are discussing Roman medicine?

When asked to list five facts about the Roman’s medical ability in questionnaire number one, the twelve pupils gave four responses in total between them:

They used a lot of home remedies.

It was very basic Roman medicine was often hand made.

They used opium as a sedative.

They bought medicines from apothecaries.

Only one is specific – the use of opium, a snippet of information which the pupil had picked up from a Biology text book. The language used in the first

two remarks means they are quite tentative. Indeed “medicine was often hand made” provides room for mass produced medication. The final point is an assumption based on comparative history; the Romans must have got their medicine from somewhere, they were from a much older time period, people in the old days got their medicine from apothecaries, therefore the Romans must have also used apothecaries.

When asked their opinion about the Romans understanding of medicine in the first questionnaire, pupils’ responses tended to indicate that they believed the Romans’ had a poor understanding, based primarily on the idea of the Romans possessing primitive equipment and any successful treatments being the product of luck:

Their medicines were poisonous.

They put together a lot of random plants and foods to cure diseases.

These were not the right things to use.

They wouldn't have devices such as microscopes or other type of machinery to solve difficult problems that had happened to people or from death.

I don't think their surgical implements were very safe nor did they have much idea of sanitation or sterilising

The Romans had a poor understanding of science so they couldn't have an excellent medical understanding.

I automatically think today’s day and age would be more advanced than the basic, simple facilities provided before.

From these samples we can see that pupils have confused time periods. Whilst sanitation deteriorated after the fall of the empire, the invention of the aqueducts – a theme most pupils have previously encountered – means that the Romans had better sanitation than one pupil believed. There is an idea that their cures were ineffective to the point of deadliness; the first remark is very definite and suggests that all medicines were deadly. The second suggests that they were merely incorrect. Finally, we see evidence of the idea that past civilisations were stupid in comparison to our own. If we look more closely at pupils preconceptions about science we see that these themes continue, with a focus on religion influencing pupils' ideas:

They thought that the Gods had something to do with everything.

I think that the Romans had a poor understanding of science because they weren't able to create marvellous machines unlike what is created nowadays and they didn't really try and solve any occurrences that had happened instead, they said that it occurred because a certain god made it happen.

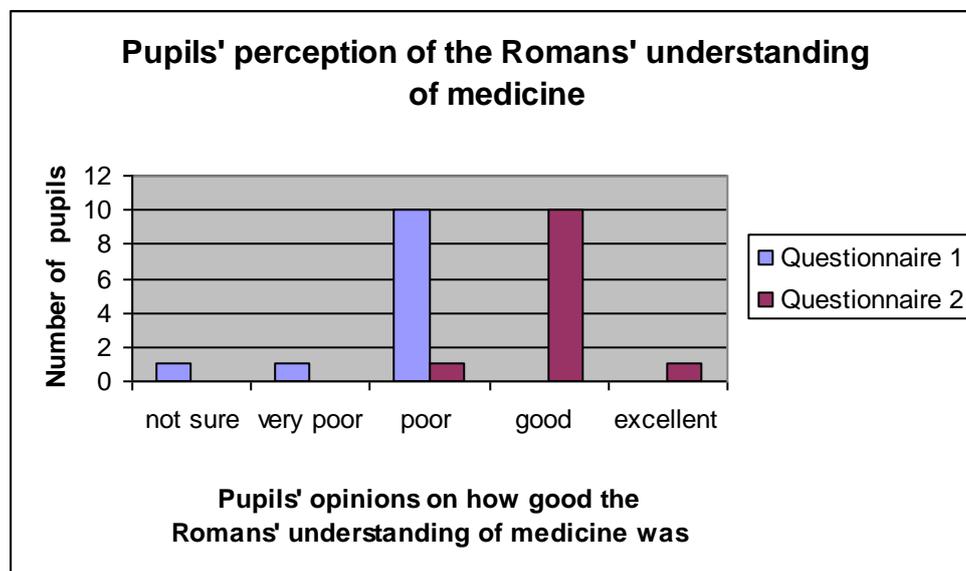
I ticked this box because they lived thousands of years ago, so they would have no modern medicine or machinery, so they couldn't see inside a living body or make sophisticated cures or conduct complicated, insightful experiments.

I am not sure about the Roman Scientific knowledge but I thought that since this was a long time ago, their knowledge would be quite limited and not as advanced as today's day and age.

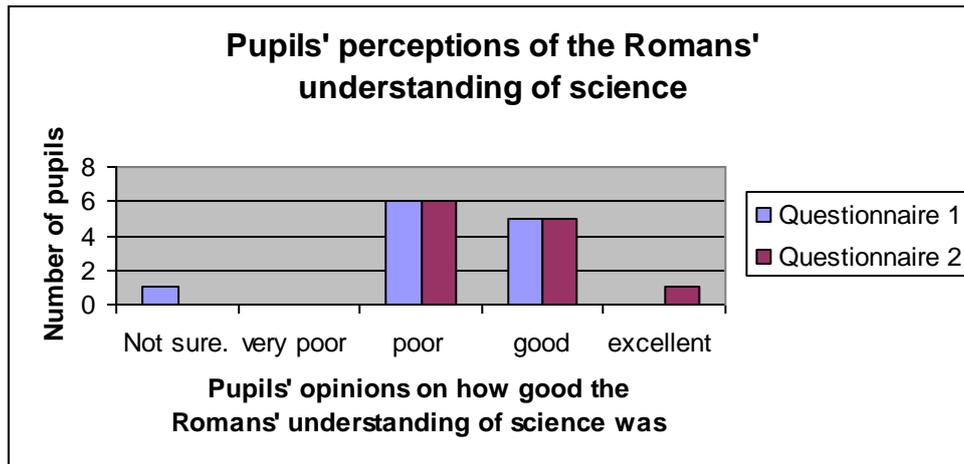
This would seem to support Conway's (2006) point that pupils come to a lesson with a preconception about the subject that "people in the past were stupid".

Do pupils associate science and medicine, and regard them similarly?

Pupils' questionnaire responses would initially seem to indicate that they see the Roman Science and Roman Medicine as separate topics independent of each other. The graph below shows how pupils' perceptions of the Romans' understanding of medicine changed over the course of the four weeks. As you can see, there is a very prominent shift.



However, we do not see the same shift of perception regarding science. In fact, the numbers of pupils' answers remained the same:



Closer inspection of their comments regarding their answers indicate that pupils actually formed their perceptions about science in the second questionnaire on the basis of what they have learnt about medicine, as the following quotations show:

They didn't know about micro organisms such as bacteria but rather just felt that it was important to stress of cleanliness.

Although they knew somewhat about hygiene, some remedies that Roman doctors used were just pointless and baseless, e.g. add wild juice of poppy for swelling.

As they have some quite sophisticated cures, so they must have had a decent basic understanding of science.

Because they understood the relevance of cleaning and their practices are very similar to ours. They also knew about under floor heating etc.

It is interesting to note, that pupils do not make references to science in the second questionnaire, when justifying their assessment of the Romans' understanding of medicine:

Doctors understood "RICE" in some cases. "Rest", "Ice",
"Compression", "Elevation".

Because they knew how to treat wounds and the doctors were able to
help patients who had problems such as tonsillitis.

Some of the cures they used are similar to those we use today - just
without anaesthetic.

They understood hygiene, they came up with remedies that have been
improved throughout time.

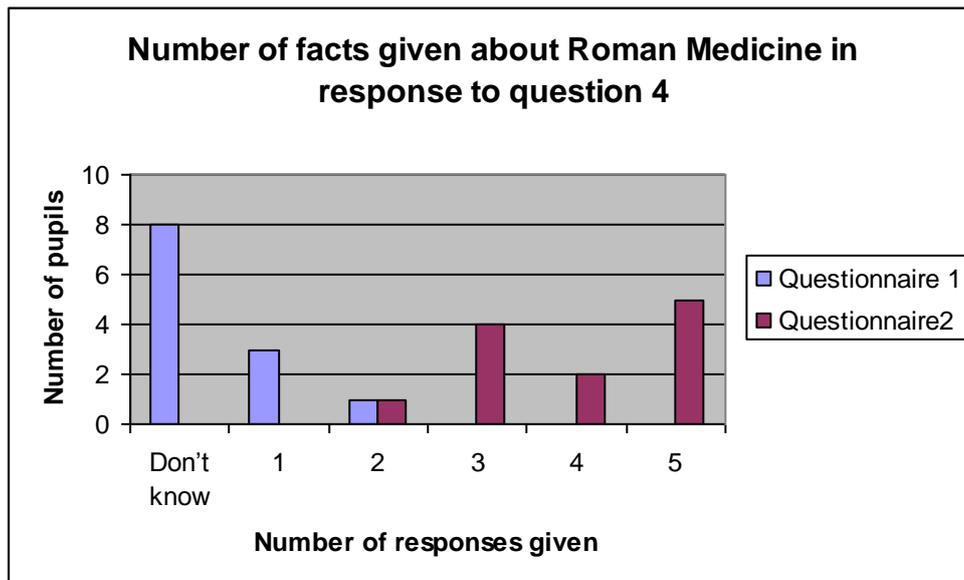
They knew quite a few good remedies that we still use today, but our
ideas are more developed.

Because they understood how cleaning wounds and sterilising things
was important.

They do however make direct comparisons between ancient and modern
medicine, suggesting the efficacy of the comparative homework task in
leaving a lasting impression. This demonstrates that my concerns regarding
the potential for pupils to be misled may have had less validity than I had
initially thought.

The absence of references to science when assessing the understanding of
medicine in the second round of questionnaires suggests that pupils'
perceptions changed whilst studying the stage. As a result of the activities
they gained a more developed sense of the rudiments of what the Romans
were medically capable of, and have used this information in forming

preconceptions about other topics. This is further supported when we look at the number of responses given by pupils asked to give facts about Roman medicine. The increased numbers of responses given to this question in the second questionnaire and illustrated in the graph below suggests that pupils became more confident about their understanding of the topic.



Similarly, the facts provided by the class are increasingly sophisticated, falling under one of five categories; doctors, astrologers, procedures, cures and general understanding.

Responses given in the first questionnaire:

They used a lot of home remedies.

It was very basic Roman medicine was often hand made.

They used opium as a sedative.

They bought medicines from apothecaries.

Responses given in the second questionnaire that related to doctors such as

Petro:

Some people were relatively advanced in medicine, e.g. doctors.

There were doctors back in the Roman times.

The doctors were knowledgeable.

Some of their doctors were quite advanced.

They were pretty good at it.

Alexandria was a good place for medicine.

I know that Roman doctors knew about hygiene.

They had doctors and astrologers who had their opinions about cures.

Responses given in the second questionnaire that related to doctors such as
the *Astrologus*:

They often had to dismiss astrologers to dismiss superstitions.

there were many different views taken (e.g. astrologers and medics)

They also have astrologers who used unscientific methods.

Responses given in the second questionnaire that related to cures:

There were many strange remedies.

If you had tonsillitis, doctors would remove your tonsils.

They used to do things such as put mice on wounds.

Some of their cures worked, others did not.

For a toothache they would put a pepper seed in the hole and wait till it
burst and then rake the bits out.

For tonsillitis they would scrape your throat out with a stick then swill it
with vinegar.

They were able to cure many small ailments, like cuts and swellings.

Some cures were very painful e.g. having tonsils removed with a fingernail or scalpel.

Some cures wouldn't have worked at all, e.g. placing boiled turnips on an injured area.

They used vinegar on wounds sometimes to clean it.

I know that if you had a toothache, they pull out your tooth and put something in the cavity.

I know that if a wound was infected they would maybe cut it off.

Many were home remedies that were tried.

Used anything they had around them, e.g. spiders and mice.

Responses given in the second questionnaire that related to procedures:

They used forceps to open wounds.

They used saws to cut bones.

They used tongue depressors to push tongue down.

They also used shears to remove body hair.

Forceps are used to help deliver babies.

They were able to perform simple surgery.

There was no anaesthetic(!)

They used a range of instruments e.g. saw, forceps.

I know that they may use a saw to amputate limbs.

They used a saw to amputate legs.

They used forceps to help women give birth.

Responses given in the second questionnaire that related to general understanding:

They knew how to amputate people and used a variety of medical instruments.

They did know about cleanliness because they would clean the wound.

The Romans thought that being clean was important.

They understood sterilisation.

Their concept of hygiene was not very well understood.

They began understanding a little more about bacteria.

They believed in cleanliness.

Hygiene was quite important.

They had instruments for surgery.

They did know a bit about hygiene.

It is quite similar to medicine nowadays but not as developed - just the same ideas.

Pupils by this point had started to distinguish between proper medical doctors, such as Petro following their exposure to him in the third lesson, and superstitious nonsense as provided by the astrologer, “they often had to dismiss astrologers to dismiss superstitions”. This remark suggests that pupils took the stories as being representative of Roman society at large, demonstrating a further misconception in the process.

Pupils included a very large number of points about cures. Again, we see further misconceptions arising from the story being taken as fact with

references to diced mouse being used to treat a wound. However, they also listed specific cures such as the use of boiled turnips on an injury, or a poppy seed being placed into a tooth cavity. Their inclusion suggests that the civilisation elements that discussed these issues were absorbed by the learner during the second week and used to renegotiate their historical perceptions. When it came to discussing procedures the Romans were capable of, pupils appear to have drawn more on the labelling exercise from week four, despite generally feeling that they had not gained much from this activity, mentioning specific instruments and their uses, for example:

They used forceps to open wounds.

They used saws to cut bones.

They used tongue depressors to push tongue down.

They also used shears to remove body hair.

We still see evidence of misconceptions based on confusion over historical time periods. For example, one reason for rating the Romans' understanding of science as poor in the second questionnaire was, "because the astrologer had stupid ideas and they didn't have many things invented such as anaesthetic". Whilst her point about anaesthetic was true following the Roman Empire's decline, the Romans themselves had access to pain relief such as opium which pupils learnt was used in the same manner as an anaesthetic in stage nineteen of the CLC. In this instance, the pupil appears to have either neglected this information or to have confused the anaesthetic capabilities in the Romans' time with that of a later period.

This confusion is seen again in their remarks about the Roman's general understanding of medicine. For example:

They did know about cleanliness because they would clean the wound.

The Romans thought that being clean was important.

They understood sterilisation.

They believed in cleanliness.

Hygiene was quite important

They began understanding a little more about bacteria.

They did know a bit about hygiene.

As you can see, a large number of comments correctly refer to the Romans having a developed understanding of hygiene. It is worth noting that one mentions bacteria, a much later concept.

Conclusion, limitations of research and recommendations for future research
or practice

Conclusion

The conclusions I can draw from this study of a limited number of pupils in a particular sort of school are of such limited application that I hesitate to call them conclusions. The evidence that I have gathered from this research seems to suggest the following points:

Pupils' preconceptions about Roman medical ability are inaccurate. Since they are unlikely to have seen the relevance of further independent investigation as Geall (2009) highlights, the ideas they come to class with are based on confused comparisons with other periods in history. They are unlikely to have explored the Roman world in their fiction reading, or to make the association that reading such books can be a source of information on which they base their preconceptions. Conway (2006) appears to be correct in saying that pupils come equipped with an oversimplified understanding that since modern technology is better developed than that of earlier time periods, people from earlier time periods must as a result be stupid.

Using Vgostsky's theory of the Zone of Development as a model (Bruner, 1986), Stage twenty does appear to address these misconceptions to a large extent. However there remains an element of historical confusion from this approach which leaves residual misunderstanding. One can argue that this is in the very nature of Vgostsky's model, but to do so would involve the

implication that a person can never really know anything with accuracy, a philosophical question I have no desire to address.

The eLearning elements on classical civilisation were the most effective in correcting misconceptions, though pupils did not necessarily recognise this, favouring reading the factual elements from the textbook instead. Pupils felt that reading the factual information in the textbook was the most effective method that contributed to their reassessment of their preconceptions. In contrast, whilst some felt they benefitted from the dramatisation of stories, it is apparent that there is a need for further clarification for pupils who are in danger of taking them at face value.

Drawbacks to the Research.

It is difficult for the action researcher to remain detached and impartial from their approach to the research (Denscombe, 1998) and I have, at times, certainly found this to be the case whilst analysing data from the questionnaires. Its small scale nature means that more generalised conclusions cannot be drawn because of its localised scope. Here, the research's setting in a girls' school introduces a gender bias in that no conclusions can be tentatively drawn about the impact of the stage on the adolescent male's preconceptions of the topic. Arguably, the different interests between the genders would mean that in a boys' school or a mixed environment factors such as pupil engagement would differ. Similarly, some elements of pupils' preconceptions would be drawn from slightly different

influences. An additional bias comes from the school's selective nature, just as Conway's research was biased given its setting in the comprehensive setting. Whilst both studies involved higher ability classes, it could be argued that the selective school contained brighter pupils of higher ability as a result of its entrance policy. Similarly, the fact that it is also a fee-paying school mean that pupils may have better resources and support structures at home from which they are able to draw upon.

Another problem associated with action research is that the necessary collaboration with the class teacher in order to observe the environment means that ownership of the project is according to Denscombe (1998) contestable. Whilst I observed and analysed, the class teacher had planned most of the material used in class, taking ideas from the department's scheme of work in addition to using some of her own, such as the activity on derivatives. The final problem with action research that has affected this study, is the integration of the research with practice. In this instance, the amount of time pupils actually had to engage with the topic was affected by a Synoptic Verb test, the results of which were needed to be used on a school-wide data base used for tracking pupils' progress and attainment. This particular intrusion resulted in the loss forty minutes of an hour and ten minute lesson.

Recommendations for further research

Pupils appeared to have retained information from primary school about the Romans. I am curious to know more about the impact of stage 20 on pupils who have gone onto study the history of medicine as a part of their GCSE or A level in History. Given that the Romans were more advanced than the peoples that followed immediately after, the impact of this prior knowledge on their initial perceptions of this topic would provide strong evidence for the validity of studying Latin in general.

Continuing the theme of the continuance, one could argue that this particular group of pupils was not as interested in the topic as they would otherwise be, having already made their options choices. An investigation into the stage's impact with a year group, such as year 8, that is expected to continue with Latin in the following year, may yield a different set of results entirely.

In the analysis I found that pupils' perceptions of science were influenced by their understanding of medicine. I am compelled to ask whether the same would be true if a study based on the same stage were to focus on the aspects of Roman science within the chapter, rather than the medicine. I feel that the predominance of medicine in the chapter would eclipse the science elements, but that pupils would have a more developed appreciation of Roman science if they have been able to spend time on it.

Finally, this research has suggested that the media heavily influences pupils' preconceptions, but that they are unaware of its influence. In particular, there

remains one large grey area in need of further clarification; that of the internet. I suggest that further study into the manners the internet influences pupils' preconceptions, perceptions and changing opinion, would grant us a better understanding of the influences behind pupils' preconceptions. This understanding could enable us to better adapt our teaching to correct such misconceptions as a result.

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Appendices

Appendix one – Questionnaire 1

Appendix two – Questionnaire 2

Appendix three – Scheme of work followed over the course of the study

Appendix four – Questionnaire Data Analysis.

Appendix one

1C Questionnaire

This research is being undertaken on behalf of the University of Cambridge, to judge the effectiveness of the material stage 20 of the Cambridge Latin Course contains. Your feedback is valuable and your time is greatly appreciated.

Over the next few weeks you will be studying stage 20. This questionnaire is designed to determine your current understanding of its topic. Please answer the questions it contains honestly to ensure the validity of this research, remember that you are not being tested. The responses you give in this questionnaire will be treated with the utmost confidentiality.

Following your completion of this questionnaire you may be invited to a follow-up interview with Miss Trenchard. If this happens, you will be given a merit and chocolate for your time.

If you would rather not take part in this aspect of the research, please tick this box:

Thank you for taking part.

Q1a. What is your name?

Q1b. What career would you like to go into after you leave school?

Don't know yet.

Q2. Is school the **only place** you have learnt information about the Romans?

Yes – please go to Q4.

No – please go to Q3.

Q3. Where else have you learnt information about the Romans from?

Please list as many sources of information as you can recall:

e.g. museums, plays, books, television programs.

Q4a. If you are able, please list up to 5 facts you know about Roman medicine.

1. _____

2. _____

3. _____

4. _____

5. _____

I don't think I know anything about Roman medicine

Q4b. Please list up to 3 things you would like to learn about Roman medicine.

1. _____

2. _____

3. _____

I don't want to learn anything about Roman medicine

Q5a. Please tick the box next to the statement that most closely represents your opinion of how good the Romans understanding of science was.

- The Romans had a very poor understanding of science.
- The Romans had a poor understanding of science.
- The Romans had a good understanding of science.
- The Romans had an excellent understanding of science.

Q5b. Please give a brief explanation of why you have ticked this box.

Q6a. Please tick the box next to the statement that most closely represents your opinion of how good the Romans understanding of medicine was.

- The Romans had a very poor understanding of medicine.
- The Romans had a poor understanding of medicine.
- The Romans had a good understanding of medicine.
- The Romans had an excellent understanding of medicine.

Q6b. Please give a brief explanation of why you have ticked this box.

Q7a. Please tick the box next to the statement that most closely represents your opinion of how interested you are in learning about Roman civilisation (not the language).

- I am very uninterested in learning about the Romans.
- I am uninterested in learning about the Romans.
- I am interested in learning about the Romans.
- I am very interested in learning about the Romans.

Q7b. Please give a brief explanation of why you have ticked this box.

Appendix two

1C Questionnaire 2

This research is being undertaken on behalf of the University of Cambridge, to judge the effectiveness of the material stage 20 of the Cambridge Latin Course contains. Your feedback is valuable and your time is greatly appreciated.

Over the next few weeks you will be studying stage 20. This questionnaire is designed to determine your current understanding of its topic. Please answer the questions it contains honestly to ensure the validity of this research, remember that you are not being tested. The responses you give in this questionnaire will be treated with the utmost confidentiality.

Following your completion of this questionnaire you may be invited to a follow-up interview with Miss Trenchard. If this happens, you will be given a merit and chocolate for your time.

If you would rather not take part in this aspect of the research, please tick this box:

Thank you for taking part.

Q1a. What is your name?

Q1b. What career would you like to go into after you leave school?

Don't know yet.

Q2. Since starting this topic, have you learnt any information about the Romans from an additional source?

- Yes – please go to Q3.
- No – please go to Q4.

Q3. Where else have you learnt information about the Romans from?

Please list as many sources of information as you can recall: e.g. museums, plays, books, television programs.

Q4. If you are able, please list up to 5 facts you now know about Roman medicine.

1. _____

2. _____

3. _____

4. _____

5. _____

- I don't think I know anything about Roman medicine**

Q5a. Please tick the box next to the statement that most closely represents your current opinion of how good the Romans understanding of science was.

- The Romans had a very poor understanding of science.
- The Romans had a poor understanding of science.
- The Romans had a good understanding of science.
- The Romans had an excellent understanding of science.

Q5b. Please give a brief explanation of why you have ticked this box.

Q6a. Please tick the box next to the statement that most closely represents your current opinion of how good the Romans understanding of medicine was.

- The Romans had a very poor understanding of medicine.
- The Romans had a poor understanding of medicine.
- The Romans had a good understanding of medicine.
- The Romans had an excellent understanding of medicine.

Q6b. Please give a brief explanation of why you have ticked this box.

Q7a. Please tick the box next to the statement that most closely represents your current opinion of how interested you are in learning about Roman civilisation (not the language).

- I am very uninterested in learning about the Romans.
- I am uninterested in learning about the Romans.
- I am interested in learning about the Romans.
- I am very interested in learning about the Romans.

Q7b. Please give a brief explanation of why you have ticked this box.

Q8a. Please tick the box next to the statement that most closely represents your opinion of Stage 20.

- this stage has greatly influenced my opinion of Roman medicine.
- this stage has slightly influenced my opinion of Roman medicine.
- this stage has hardly influenced my opinion of Roman medicine.
- this stage has not influenced my opinion of Roman medicine.

Q8b. Please give a brief explanation of why you have ticked this box.

Q9. Which of the following activities changed your opinion of Roman medicine **the most**?

- Reading the stories in the text book
- Reading the factual information in the text book
- Watching plays of the stories
- Watching clips giving factual information.
- Thinking about medical derivations with your teacher
- Seeing and labelling pictures of Roman medical instruments

Q10. Which of the following activities changed your opinion of Roman medicine **the least**?

- Reading the stories in the text book
- Reading the factual information in the text book
- Watching plays of the stories
- Watching clips giving factual information.
- Thinking about medical derivations with your teacher
- Seeing and labelling pictures of Roman medical instruments

Q11. When did you feel that you were learning **the most**?

- Reading the stories in the text book
- Reading the factual information in the text book
- Watching plays of the stories
- Watching clips giving factual information.
- Thinking about medical derivations with your teacher
- Seeing and labelling pictures of Roman medical instruments

Q12. When did you feel that you were learning **the least**?

- Reading the stories in the text book
- Reading the factual information in the text book
- Watching plays of the stories
- Watching clips giving factual information.
- Thinking about medical derivations with your teacher
- Seeing and labelling pictures of Roman medical instruments

Appendix three

Scheme of work that took place during the four weeks:

Week one: 9/3	
<p><u>Classwork:</u> Questionnaire 1– appendix one. <i>Venatio II</i> completed through a conversion activity Stage 20 model sentences - CLC 2 p.132.</p>	<p><u>Homework:</u> Finish classwork Complete model sentences sheet: translate sentences highlight “-ing” words.</p>
Week two: 16/3	
<p><u>Classwork:</u> <i>Remedium Astrologi</i> sheet completed – taken from teacher’s handbook. Accompanied by a dramatisation of the story taken from the eLearning resource. Classical Civilisation aspect or Roman medicine taken from eLearning resource. Roots of derivative medical terms discussed. Class read classical civilisation element on p142 aloud.</p>	<p><u>Homework:</u> Prepare for synoptic vocabulary test.</p>
Week three: 23/3	
<p><u>Classwork:</u> Synoptic Verb Test sat. Dramatisation of <i>Petro</i> story obtained from eLearning resources. Comprehension questions answered in class. 10 minute focus group.</p>	<p><u>Homework:</u> Sheet contrasting the Astrologer treatments with modern medical treatments.</p>
Week four: 30/3	
<p><u>Classwork:</u> About the Language: Participles – CLC 2 p.135 <i>Astrologus Victor</i> sheet completed in conjunction with CLC 2 p.138. Labelling Roman medical instruments and comparing their use with modern ones. Questionnaire 2 – appendix two.</p>	<p><u>Homework:</u> None set.</p>

Appendix four

Questionnaire Data analysis

Comparative questions from Questionnaires 1 and 2

Q1. What career would you like to go into after you leave school?

Medicine	3
Dentistry	2
Don't know	4
Law	1
Author	1
Teaching	1

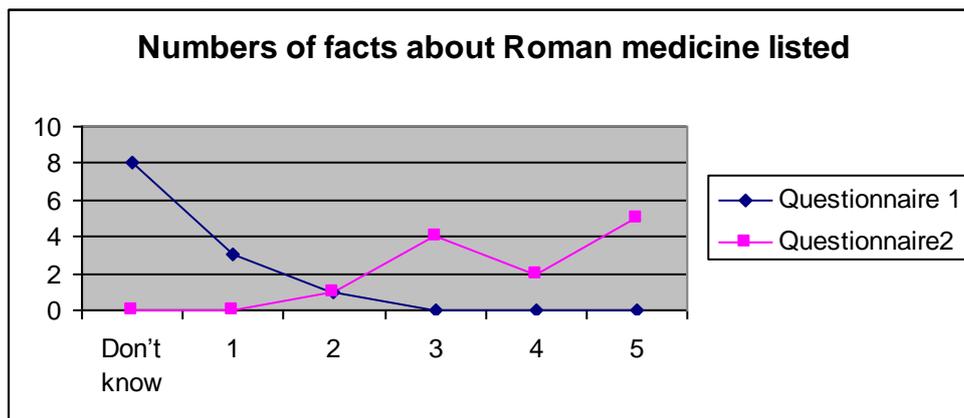
If conflicting answers given, pupil deemed to not know.

If multiple options given, option repeated in second questionnaire recognised.

Q3. Apart from school, where else have you learnt information about the Romans from?

Horrible histories – book	4
Horrible histories – television	4
Chedworth	12
Cirencester Museum	9
Internet	1
Internet games	2
British Museum	2
Discovery channel	1
Dr Who – television	1
Biology textbook	1
Seven Wonders of the Ancient World – book	1

Q4. If you are able, please list up to 5 facts you now know about Roman medicine.



	Don't know	1	2	3	4	5
Questionnaire 1	8	3	1	0	0	0
Questionnaire 2	0	0	1	4	2	5

Facts given in Questionnaire 1:

They used a lot of home remedies.
It was very basic Roman medicine was often hand made.

They used opium as a sedative.
They bought medicines from apothecaries.

Facts given in Questionnaire 2:

On astrologi	On cures	On procedures	On general understanding
<p>They often had to dismiss astrologers to dismiss superstitions. there were many different views taken (e.g. astrologers and medics) They also have astrologers who used unscientific methods.</p>	<p>There were many strange remedies. If you had tonsillitis, doctors would remove your tonsils. They used to do things such as put mice on wounds. Some of their cures worked, others did not. For a toothache they would put a pepper seed in the hole and wait till it burst and then rake the bits out.</p>	<p>They used forceps to open wounds. They used saws to cut bones. They used tongue depressors to push tongue down. They also used shears to remove body hair. Forceps are used to help deliver babies. They were able to perform simple surgery. There was no anaesthetic(!)</p>	<p>They knew how to amputate people and used a variety of medical instruments. They did know about cleanliness because they would clean the wound. The Romans thought that being clean was important. They understood sterilisation. Their concept of hygiene was not very well understood.</p>
<p>On medici</p>	<p>For tonsillitis they would scrape your throat out with a stick then swill it with vinegar.</p>	<p>They used a range of instruments e.g. saw, forceps.</p>	<p>They began understanding a little more about bacteria.</p>
<p>Some people were relatively advanced in medicine, e.g. doctors. There were doctors back in the Roman times. The doctors were knowledgeable. Some of their doctors were quite advanced. They were pretty good at it. Alexandria was a good place for medicine. I know that Roman doctors knew about hygiene. They had doctors and astrologers who had their opinions about cures.</p>	<p>They were able to cure many small ailments, like cuts and swellings. Some cures were very painful e.g. having tonsils removed with a fingernail or scalpel some cures wouldn't have worked at all, e.g. placing boiled turnips on an injured area. They used vinegar on wounds sometimes to clean it. I know that if you had a toothache, they pull out your tooth and put something in the cavity. I know that if a wound was infected they would maybe cut it off. Many were home remedies that were tried. Used anything they had around them, e.g. spiders and mice.</p>	<p>I know that they may use a saw to amputate limbs. They used a saw to amputate legs. They used forceps to help women give birth.</p>	<p>Hygiene was quite important. They had instruments for surgery. They did know a bit about hygiene. It is quite similar to medicine nowadays but not as developed - just the same ideas.</p>

Q5a. Please tick the box next to the statement that most closely represents your current opinion of how good the Romans understanding of science was.

Option	Questionnaire 1	Questionnaire 2
The Romans had a very poor understanding of science.	0	0
The Romans had a poor understanding of science.	6	6
The Romans had a good understanding of science.	5	5
The Romans had an excellent understanding of science.	0	1
Not sure.	1	0

Reasons given in Questionnaire 1:

Poor:

I think that I have heard somewhere [that] they did not know how flowers and plants grew. They thought that the Gods had something to do with everything.

They didn't know about medicine properly. Most of their medicines were poisonous!

I think that the Romans had a poor understanding of science because they weren't able to create marvellous machines unlike what is creating nowadays and they didn't really try and solve any occurrences that had happened instead, they said that it occurred because a certain god made it happen.

They knew bits of science and for their time they were quite

knowledgeable. E.g. They knew about planets, but comparing it to know, they knew little.

I ticked this box because they lived thousands of years ago, so they would have no modern medicine or machinery, so they couldn't see inside a living body or make sophisticated cures or conduct complicated, insightful experiments.

I think the Romans made up a lot of things so that they had something to believe. They were very good inventors however and developed the Roman world so it was very advanced.

Good:

I think they had a understanding of science because their scientific knowledge are famous for being ahead of their

time e.g. Underheated flooring.

They were very forward thinking (by creating roads etc) so although some of their theories were wrong, they also had good theories.

Because they invented quite a lot of things and to do this they would need to know about science.

They were able to build and develop many things like buildings and various inventions.

I am not sure about the Roman Scientific knowledge but I thought that since this was a long time ago, their knowledge would be quite limited and not as advanced as today's day and age.

Reasons given in Questionnaire 2:

Poor:

Because the astrologer had stupid ideas and they didn't have many things invented such as anaesthetic.

They didn't know about micro organisms such as bacteria but rather just felt that it was important to stress of cleanliness.

They understood some things well but other things needed improving.

Although they knew somewhat about hygiene, some remedies that Roman doctors used

were just pointless and baseless, e.g. add wild juice of poppy for swelling.

They believed earth was flat, only believed that you could to life from Isis etc.

Good:

They invented a manner of things

They knew how to dress a wound and clean it. They also knew about planets.

As they have some quite sophisticated cures, so

they must have had a decent basic understanding of science.

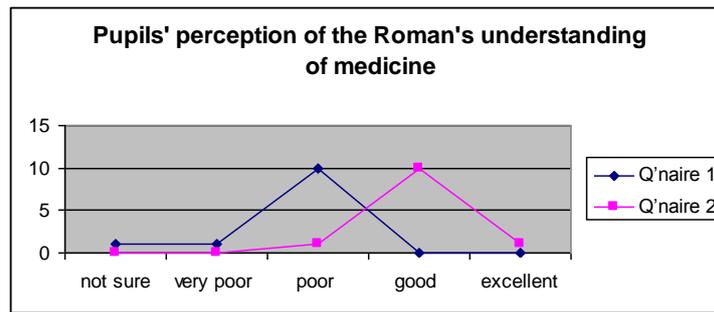
They knew wounds had to be clean.

Because they understood that you need good hygiene to cure people. They also understood what was needed to cure things sometimes.

Very Good:

Because they understood the relevance of cleaning and their practices are very similar to ours. They also knew about under floor heating etc.

Q6. Please tick the box next to the statement that most closely represents your current opinion of how good the Romans understanding of medicine was.



Option	Questionnaire 1	Questionnaire 2
Not sure.	1	0
The Romans had a very poor understanding of medicine.	1	0
The Romans had a poor understanding of medicine.	10	1
The Romans had a good understanding of medicine.	0	10
The Romans had an excellent understanding of medicine.	0	1

Reasons given in Questionnaire 1:

Very Poor:

Their medicines were poisonous.

you of their medical brilliance.

have an excellent medical understanding.

Poor:

They put together a lot of random plants and foods to cure diseases. These were not the right things to use.

I doubt they knew much about medicine because it's a topic that they would have had their own ideas about, although they probably were wrong.

They used opium as a sedative, but it had (and still has) dangerous side-effects.

I would think that they have a poor understanding because they wouldn't have devices such as microscopes or other type of machinery to solve difficult problems that had happened to people or from death. They may have depended on herbal remedies instead.

I don't think their surgical implements were very safe nor did they have much idea of sanitation or sterilising (but I'm not sure).

Once again because this was a long time ago, I automatically think today's day and age would be more advanced than the basic, simple facilities provided before.

I think poor because their medicine is not as famous as their other scientific knowledge. No one tells

I know very little about Roman medicine, but I guess their knowledge was about as good as others science.

I don't think the Romans will have had a very good understanding however I don't know much about Roman medicines. They seemed to be pretty good inventors so they may have made good medicines, but may not have known all the horrible side effects. They followed myths.

Reasons given in Questionnaire 2:

Poor:

Because the astrologer had stupid ideas and they didn't have many things invented such as anaesthetic.

there were some things they did not grasp so well.

I think they had a decent understanding of hygiene and of blood flow etc.

Good:

Doctors understood "RICE" in some cases. "Rest", "Ice", "Compression", "Elevation".

They knew about cleanliness

They understood hygiene, they came up with remedies that have been improved throughout time.

Because they knew how to treat wounds and the doctors were able to help patients who had problems such as tonsillitis.

As above, but without planets.

They had a lot of cures that worked, but not all of them were for the reasons they thought and some cures only brought benefits because of psychological reasons.

They knew quite a few good remedies that we still use today, but our ideas are more developed.

They had some cures which were effective however

Some of the cures they used are similar to those we use today - just without anaesthetic.

Very Good:

Because they understood how cleaning wounds and sterilising things was important.

Q7. Please tick the box next to the statement that most closely represents your current opinion of how interested you are in learning about Roman civilisation (not the language).

Option	Questionnaire 1	Questionnaire 2
I am very uninterested in learning about the Romans.	0	0
I am uninterested in learning about the Romans.	2	2
I am interested in learning about the Romans.	7	7
I am very interested in learning about the Romans.	3	3

Reasons given in Questionnaire 1:

Uninterested

I am not really intrigued or motivated by Roman lifestyle and how they lived.

I don't really enjoy learning about it. I think it's generally ok. It can be interesting. I think it depends on what you learn about.

Interested

I would like to learn about their thoughts of modern medical advances e.g. Bacteria and the sense behind their ideas. The history of medicine is something I like learning about.

I enjoy history and learning about the past, and the Romans are a very interesting topic, although not my favourite.

I find the language difficult but I think classical civilisation is interesting. I enjoy history and it is the same kind of thing.

Because I find it interesting to see how people who were alive so long ago lived, and what they did with their lives.

I think it would be interesting to learn about different cultures and what sort of clothes they wore, what races and religion and quality of houses etc.

I think it is interesting to find out the differences between today and how things have evolved. I like finding out how smart and well developed the Romans were, what they wore and how they

lived and worked and their beliefs.

Because I like to know how everything has changed.

Very interested

I would like to learn about the Roman Civilisation and how they lived because I feel it is important to know about the past and have they lived.

Because I would like to know more about what they invented and what was dug up in Pompeii and their medical resources.

I have always liked history and generally preferred older history such as Tomand and Egyptians to more modern history.

Reasons given in Questionnaire 2:

Uninterested

I don't really want to find out about things I won't have to learn.

I find it boring. They could improve by making it more fun to learn then maybe we would learn something.

Interested

Because they are an interesting period to study.

I want to know more about how they lived.

It is a lot easier and more interesting when the

language and I enjoy history and it is a form of history.

Because I find it interesting to hear how people lived so long ago.

I think what I have learnt so far encourages me to lean more as it is really interesting.

Found I learnt more and interesting how much they knew so early on.

I find it easier to learn and its good to see how the world has changed.

Very Interested

I would love to learn more about the Romans; how they treated other patients such as the ones with cancer.

I've always liked history and would like to know more about ancient history.

Because I like learning about the past and how it influences the modern life.

Questionnaire 2 non-comparative questions.

Q8. Please tick the box next to the statement that most closely represents your opinion of Stage 20.

This stage has greatly influenced my opinion of Roman medicine.	5
This stage has slightly influenced my opinion of Roman medicine.	6
This stage has hardly influenced my opinion of Roman medicine.	0
This stage has not influenced my opinion of Roman medicine.	0
no answer	1

Please give a brief explanation of why you have ticked this box.

slightly

I knew Romans were quite advanced, but this stage has shown me they are more advanced.

It helped quite a bit (it might have helped more but I missed a lesson).

It was quite uninteresting.

Because it has taught me about some things but not everything.

They are slightly better a bit then I thought.

greatly

I didn't know much about Roman medicine till now. I didn't know they could treat them properly.

Petro and his demonstration trying to cure Barbillus.

I did not initially understand how advanced they were in some cases.

As at first I thought it probably didn't work, but now I know some of the cures were effective and sophisticated.

I thought Romans knew nothing of hygiene and the tools they used were more advanced then I thought it would be.

Q9. Which of the following activities changed your opinion of Roman medicine **the most**?

Reading the stories in the text book	2
Reading the factual information in the text book	7
Watching plays of the stories	3
Watching clips giving factual information.	1
Thinking about medical derivations with your teacher	1
Seeing and labelling pictures of Roman medical instruments	0
Unanswered	2

Q10. Which of the following activities changed your opinion of Roman medicine **the least**?

Reading the stories in the text book	1
Reading the factual information in the text book	0
Watching plays of the stories	2
Watching clips giving factual information.	0
Thinking about medical derivations with your teacher	2
Seeing and labelling pictures of Roman medical instruments	6
Unanswered	2

Q11. When did you feel that you were learning **the most**?

Reading the stories in the text book	1
Reading the factual information in the text book	6
Watching plays of the stories	2
Watching clips giving factual information.	1
Thinking about medical derivations with your teacher	1
Seeing and labelling pictures of Roman medical instruments	1
Unanswered	2

Q12. When did you feel that you were learning **the least**?

Reading the stories in the text book	2
Reading the factual information in the text book	0
Watching plays of the stories	3
Watching clips giving factual information.	1
Thinking about medical derivations with your teacher	1
Seeing and labelling pictures of Roman medical instruments	2
Unanswered	2

