Guide NANOyou in School:

Communicating NANOtechnology to European YOUth

Focusing on ELSA

Language Teachers’ Guidelines
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FOREWORD

Webquests as a learning model for dealing with the ELSA of nanotechnology

Nanoyou ELSA dilemmas can work wonderfully in the foreign language classroom. They will surely motivate students to speak out and air their opinion since the emphasis is shifted from format to content in these scenarios. That is to say, when students are engaged in this kind of activities the focus is mainly on how students can express their beliefs, their perspectives on a controversial issue and linguistic awareness is a secondary concern. Students should not be afraid of making errors while expressing their thoughts.

Nanoyou dilemmas create an ideal setting for students to interact with one another and to exchange information, attitudes, feelings and thoughts. They fit well into the communicative language classroom. One might argue that this could be achieved through discussions on current popular culture issues, but we must not forget that this could sideline those students who, for example, are not interested in reality shows, computer games or simply are not cinema-goers.
The Nanoyou dilemmas are to some extent self-contained in the sense that they do not require any previous knowledge in the field. Everybody starts exploring the different aspects of a certain dilemma from the basics and move onwards as they dig deeper and deeper into the subject matter. This means the playing field is even and everyone has the same chances to build up his/her argument and present it at the end of the webquest lesson.

The teacher can incorporate certain types of linguistic elements of course. This is even essential since without some specific lexical items a real debate is unimaginable. The teaching of useful phrases to discuss specific issues is indispensable therefore we provide you a set of such phrases after this text.

ELSA (Ethical, Legal and Social Aspects) of nanotechnology can be dealt with efficiently in the classroom by making good use of the webquest model. The concept was created in 1995 by Bernie Dodge and Tom March at the San Diego State University. According to Dodge a webquest is "an inquiry-oriented activity in which some or all of the information that learners interact with comes from resources on the internet, optionally supplemented with videoconferencing". The inquiry-based learning process and problem-based learning are the cornerstones of the webquest model. Learners typically complete webquests as cooperative groups. Each learner within a group gets a particular role or specific area to research. Webquests often culminate in role-playing scenarios, where students take on the personas of different professionals. It must be pointed out that the internet resources are merely vehicles to allow independent investigation toward the solving of interesting and important problems or reconciling of

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1 Dodge, B. Some thoughts about Webquests. See http://webquest.sdsu.edu/about_webquests.html
issues/perspectives which is exactly the case with the ELSA of nanotechnology.

Webquests have a typical structure, which can be described briefly in the following way:

**Introduction:** The introduction generally gives an overview of what the theme of the webquest is, and gives the overall scenario. It sets the stage for the activity, catches the reader's attention to draw them into the quest.

**Task:** The task is like lesson objectives. It gives information on what the expected outcome of the webquest is, what end-product the teacher has in mind. It also describes the tools that are to be used during the process.

**Process:** Here you will find the step by step directions for students to follow. It will list the Internet resources that you want the students to visit in order to complete the objectives you present in the task section. Students of course can explore and interact with any relevant texts and sites which ultimately make them more knowledgeable in a certain field.

**Evaluation:** The evaluation section is essentially a rubric that informs the students how you will be grading them on their final product.

**Conclusion:** This usually includes a summary of the learning, and can include questions for further self-study or reflection.

To sum up, the use of Nanoyou dilemmas can make an important contribution to the teaching of English from an intermediate level upwards. Besides improving the
communicative skills, by properly scaffolding certain authentic texts the teacher could incorporate some desired linguistic features into the whole Nanoyou webquest project. The Nanoyou webquest scenarios can consist of a range of activities ranging from straightforward reading comprehension exercises to more complex essay-writing exercises and debates, role-plays. With the use of great online tools the teacher can keep track of how students interact with different types of authentic materials, how they try to build up their argument, how they create for example an argument map or concept map and finally how they present it. The dilemmas no doubt bring a new excitement to the language lessons with their realistic nature.

The Nanoyou dilemmas encourage a healthy debate and at the very same time they loosen up inhibitions. As we know this is very important since it is conducive to effective learning, language acquisition (Krashen’s affective filter hypothesis). Finally, the use of Nanoyou dilemmas develops critical thinking skills which can be transferable to other areas of a student’s life. Students can learn different skills even as a by-product of the whole mini-project, skills that can be used outside the sheltered classroom environment.

The Teachers’ Guide for teachers of English as a foreign language consists of an article on the webquest teaching model, which could be efficiently used to deal with the ethical, legal, social aspects of nanotechnology, and which could culminate in a debate, a role play (using the Nanoyou role play cards) or essay writing at an English lesson. Following this section two sample webquests are given (one on a particular ethical aspect of nanotechnology, and one on the mobile phones) and then comes the section on the recommended ICT tools, sites and ideas for discussing ELSA.

The appendix section gives further guidance (mindmaps) for carrying out fruitful debates in the foreign language classroom.
WEBQUESTS: BLENDING LEARNING PHILOSOPHY AND PRACTICE

Dealing with the Ethical, Legal and Social Aspects (ELSA) of nanotechnology in the foreign language classroom

INTRODUCTION

Thousands and thousands of schools are now connected to the Internet all across the world and more and more teachers try to exploit the educational potentials of this medium. Bernie Dodge - an American professor from San Diego State University has focused on the design, implementation and evaluation of computer-based learning environments since 1995 and created a learning model which is now one of the most popular and most effective Internet–based project models/approaches that can be adapted efficiently to deal with the ethical, legal, social aspects of nanotechnology. This approach clearly describes the process of the partly online learning experience which challenges, motivates and engages learners.

Bernie Dodge in an early article about this method defines the term in the following way:

“A WebQuest is an inquiry-oriented activity in which some or all of the information that learners interact with comes from resources on the internet, optionally supplemented with videoconferencing.” (1997)

Tom March - who has also been working to develop the WebQuest as a strategy for effectively integrating the Web into classroom instruction - says that

“ A WebQuest is a scaffolded learning structure that uses links to essential resources on the World Wide Web and an authentic task to motivate students’ investigation of a central, open-ended question, development of individual expertise and participation in a final group process that attempts to transform newly acquired information into a more sophisticated understanding. The best WebQuests do this in a way that inspires students to see richer thematic relationships,
facilitate a contribution to the real world of learning and reflect on their own metacognitive processes." (1998)

A WebQuest activity fosters the development of higher order thinking and the products of WebQuests are usually put out to the world for some real feedback.

A WebQuest blends the benefits of the constructivist approach, inquiry-based learning approach, project-based approach and cooperative learning.

Students not only collect and organize information they find on the web, they work in groups and usually take up different roles modeled from the real world (e.g. adult professions). Students have to participate in the process of how they will approach a WebQuest task, the level of autonomy and creativity is enhanced during the whole project.

With the proper guidance and scaffolding, students can learn a lot and can develop several skills.

Students like trendy things and we educators can do a great service by showing them what the Internet is good for and can empower them with the right strategies and skills to take advantage of the educational power of the Net.

Second language teaching is most of the time connected with topics/issues which are/might be challenging, motivating for our students. The topic, the text usually gives a framework for our activities. We teachers do not expect our students to become experts in a certain field, say euthanasia when dealing with an article on this controversial topic but we would like them to learn inadvertently a lot about the target language and we can use the text as a starting point for a classroom discussion or develop certain linguistics skills.

Teachers of English use WebQuests in a similar way. Students working in groups of three may explore sites about mobile phones (see Webquest on mobile phones) and exploring the pros and cons of its use as well as the different aspects that should be taken into account when one buys a cell phone. The ELSA (Ethical, Legal and Social Aspects) of nanotechnology can be dealt with efficiently in the classroom by making good use of
the webquest model. This model goes very well with the Nanoyou role playing game in which students are expected to work in groups and present different opinions of stakeholders' with regard to nanotechnology dilemmas (ELSA) such as „Should nano sensors be used to diagnose medical conditions in the early stages when there are still no definite restrictions in place to protect patients’ privacy?” . Students try to come to a consensus as a representative of a distinctive role: manufacturer, consumer, representative of an Environmental Agency, representative of a Farming & fishing community, child.

In this particular webquest there is a highly controversial topic and students should do research in the specific field and try to get as familiar with their role as possible. They gain insight into a hot issue by getting aware of the different perspectives. According to the feedback we have gained so far from teachers piloting the nanoyou materials this activity is highly challenging and motivating.

By using this model what we are really doing is encouraging them to read, write, listen and speak in the target language. In this respect then, a WebQuest is similar to other source materials used in foreign language teaching.

Nevertheless, WebQuests aiming at developing second language acquisition require a lot of scaffolding, guidance. We have to give our students lexical and syntactical support -as they would typically find in their textbook or their classroom-, but we should bear in mind that the focus is on the specific task described by the WebQuest in our special case the Nanoyou dilemmas, rather than focusing on grammar and vocabulary.

"Scaffolding is a temporary structure which provides help at specific points in the learning process," states Dodge (Dodge, 1997). He goes on to outline three basic types of scaffolding: reception scaffolds, transformation scaffolds and production scaffolds. (1998)

Why do WebQuests then, if they are just like every other activity we design for students? There are many reasons. One important element in language learning is
motivation and students find it intrinsically motivating to use real resources on the Internet.

Authenticity is another key element in these web-based activities. We invite our students to get involved in real-life activities, problems, investigations. The materials that can be found on the Internet are usually more up-to-date and authentic than the topics covered in a language textbook. Developing reading skills like skimming, scanning and reading for gist becomes a natural process for the students since that is the only way for them to become "experts" of the topic and to accomplish the task. But there can be several undesirable elements of Internet activities like getting involved with time-consuming web searches, or surfing the Net aimlessly.

The WebQuest model allows teachers to focus students' attention on a specific goal, and provides students with the resources and guidance that enables them to reach that particular goal, and in the meantime students use the target language in a meaningful and authentic way (Blasszauer, 2003 and 2004).

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THEORETICAL UNDERPINNINGS

PROJECT-BASED LEARNING

Research (Kern and Warschauer 2000; Shetzer and Warschauer 2000) has demonstrated that collaborative computer-based learning yields a number of significant educational benefits to ESL students. This is especially true when the collaboration engages students in tasks that require independent problem solving and critical thinking. Project-based learning first began in 1918 with an article called “The Project Method”, by Kilpatrick. Although Kilpatrick was influenced by John Dewey who advocated that schools should reflect society, in the late 1800s, he was more interested in group learning
than in the cognitive development that resulted from it. More recently, brain research has shown that project-based learning works by

“helping move students beyond surface learning, beyond learning held in short-term memory, learned for the test and then dropped… because the learner sees the information as important to him” (Thomas, J.W. 2000).

The technology-based learner interface was brought to fruition through the work of Papert at the MIT Media Laboratory. Papert’s LOGO has long been the prototype for designing learning activities using a computer, software, and a constructivist approach. (Arthur Recesso, 2001)

In project-based learning, students work in teams to explore real-world problems and create presentations to share what they have learned. Compared with learning solely from textbooks, this approach has many benefits for students, including:

• Deeper knowledge of subject matter;
• Increased self-direction and motivation;
• Improved research and problem-solving skills.

A growing body of academic research supports the use of project-based learning in schools as a way to engage students, cut absenteeism, boost cooperative learning skills, and improve test scores. Those benefits are enhanced when technology is used in a meaningful way in the projects.

Using project-based learning, students can acquire life long learning skills which include the ability to find and use appropriate learning resources. The process used in PBL is the following:

• Students are presented with a problem (case, research paper, video tape, for example). In groups they organize their ideas and previous knowledge related to the problem, and attempt to define the broad nature of the problem.
• Throughout discussion, students pose questions on aspects of the problem that they do not understand.

• Students see during the PBL that learning is an ongoing process, and that there will always be (even for the teacher) new angles, perspectives, problems to be explored.

CONSTRUCTIVISM

In my opinion the traditional classroom still falls behind the desired standard. It still emphasizes the learning of answers more than the exploration of questions. The development of critical thinking skills is a bit neglected and emphasis is put on bits and pieces of information instead of understanding issues holistically, problems in proper context. Traditional classroom techniques often fail to encourage students to work together, to share ideas and information freely with each other, or to use modern instruments in the learning process. There is little room for student-initiated questions. The goal of the learner becomes to regurgitate what he/she has heard at the lesson or read in the textbook.

It is without doubt that the school should teach students those vital skills that are required by society; that is, students should be able to apply what they learn in school to the various and unpredictable situations that they might encounter in their future life.

In this world of rapid change, where information is expanding and increasing in complexity, learning is a survival skill. Mastering the basics (reading, writing, and arithmetic) is as important as ever, but it is no longer enough. Today’s students may need to learn more than previous generations. They need to know how to find and use new information, to make informed decisions about complicated issues, and to collaborate as part of a team. Since the pace of change shows no signs of slowing down, students also need to learn new ways of study.
Students need to develop sophisticated thinking and problem-solving skills and, above all, the ability to continue learning throughout their lives and to make use of information and communication technology. To accomplish this, many educators are using hands-on projects and interactive technologies, which motivate students to learn (see, e.g., statistics from the USA at Technology Counts 2010).

By changing the focus of the classroom from teacher dominated to student-centered using a constructivist approach we could yield positive results. A major theme in the theoretical framework of Bruner (Bruner, 1990) is that learning is an active process in which learners construct new ideas or concepts based upon their current/past knowledge.

The currently published CORELL journal (2010) (Computer Resources For Language Learning) focused on the potentials of webquests in the language classroom. Zlatkovska has summarised her findings in the following way:

„Among the many technological tools available, WebQuests emerge as an example of a powerful means for supporting the principles of constructivism (Matusevich, 1995, Dodge, 1997, Vidoni & Maddux, 2003, Godwin-Jones, 2004, March, 2008) in language teaching. According to March (2008), WebQuests are “a way to integrate a number of sound learning strategies”, among which he mentions constructivism, “while also making substantial educational use of the Web” (2).” (2010)

Teachers assist the students in developing new insights and connecting them with their previous learning. Ideas are presented holistically as broad concepts and then broken down into parts. The activities are student centered and students are encouraged to ask their own questions, carry out their own researches, analyze information and come to their own conclusions.

The WebqQuests model which integrates the constructivist approach opens new avenues for learning and offers great challenges for the teacher trying to implement it.

If a teacher wants to keep track of students’ research work then I can highly recommend the use of a free software called Nestor. Here goes a quote from their site: „Promoting constructivist learning: in education, when the Web is used as a source of information, Nestor maps provide a kind of "notebook": t eachers can
ask their students to search the Web for documents relevant to a given theme ... and ask them to provide the results as a Nestor map: the students are encouraged to add their personal annotations, personal texts and information structure to the maps (and not merely pure Web resources!). Nestor philosophy is to encourage users evolve from Web readers to Web writers, from navigation experience to abstraction, from individual work to collaborative work and thus from raw information access to knowledge construction. Nestor is intended to be used as a constructionist environment.” (2010)

**INQUIRY-BASED LEARNING**

An old adage states: "Tell me and I forget, show me and I remember, involve me and I understand." The last part of this statement is the essence of inquiry-based learning. The process of inquiring begins with gathering information and data through applying the human senses.

Memorizing facts and information is not the most important skill in today's world. Facts change, and information is easily accessible by modern technology. Inquiry is not so much seeking the right answer - because often there is none - but rather seeking appropriate resolutions to questions and issues. Teachers should develop their students inquiry skills and nurture the attitude of seeking information and to encourage and enable individuals to continue the quest for knowledge throughout life.

The key elements of the Inquiry-Based Science Education (IBSE) approach are the following:

- Raising the interest and curiosity of the pupils for a scientific problem or challenge;
- Moving from the state of curiosity towards an educational process; inviting pupils to express in words what the problem is about;
• Giving explicit pedagogical action to move from the definition of the problem to planning an inquiry-based process;
• Implementing inquiry-based process activities planned by setting up tests, experiments making use of the ICT based tools / techniques;
• Confronting the results with the reality; comparing the concrete results or outcomes with the expected results. Organising an individual or collective validation of the outcomes;
• Drawing conclusions highlighting what scientific knowledge has been acquired; possible links are made with new scientific problems;
• Finding out how the use of ICT based tools / techniques has facilitated the whole process;
• Making the link between science and ethics, technology, (political) decision-making, the making of choices.” (Águeda Gras-Velázquez, Alexa Joyce, Magda Kirsch, et al 2009)

Seeking for highly relevant texts in order to dig into a certain topic can be a daunting task for those who are not proficient enough to do Internet searches. But there are several tools that can assist one in his/her quest, such a tool is e.g. Mashpedia.

„Mashpedia is a web encyclopedia enhanced with cutting-edge functionalities and sophisticated features such as multimedia content, social media tools and real-time information; it's free to use and open for public participation, allowing users to discuss specific topics, post and answer questions, share relevant links or contribute in new creative ways. Mashpedia integrates a variety of online services and applications like Wikipedia, YouTube, Twitter, Flickr, Google News, Books, Blog Posts, and further contextual information into a single slick interface, presenting an organized outlook of live content feeds for every topic, thus providing a broad spectrum of services and features that eliminate the user's need to visit each service separately.” (Peachey, Nik 2010)
STRUCTURE OF THE WEBQUEST MODEL

Introduction
The first decision to make in creating a WebQuest is that of the topic.

A good topic is one that fits these criteria:

1. It is clearly tied to the curriculum standards.
2. It makes good (though not necessarily exclusive) use of the Web, and could not be taught as well without the Web.
3. It requires a level of understanding that goes beyond mere comprehension.
4. It is challenging, motivating and suits students’ interest.

Task
Describe clearly what the end result of the learners' activities will be. The task could be a:

- problem or mystery to be solved;
- position to be formulated and defended;
- product to be designed;
- complexity to be analyzed;
- personal insight to be articulated;
- summary to be created;
- persuasive message or journalistic account to be crafted;
- a creative work, or
- anything that requires the learners to process and transform the information they've gathered.
If the final product involves using some tool (e.g., HyperStudio, the Web, video) you should mention it here.

**Process**

Describe briefly how the lesson is organized. Does it involve more than one class? Is it all taught in one period per day, or is it part of several periods? How many days or weeks will it take? Is it single disciplinary, interdisciplinary, multidisciplinary or what?

If students are divided into groups, provide guidelines on how you might do that.

If there are misconceptions or stumbling blocks that you anticipate, you should describe them here and suggest ways to get around them.

**Resources**

Describe what is needed to implement this lesson. Some of the possibilities:

- Class sets of books
- E-mail accounts for all students
- Specific software (how many copies?)
- Specific hardware (what kind? How many?)
- Specific reference material in the classroom or school library
- Video or audio materials

If the lesson makes extensive use of specific websites, it would be appropriate to list, describe and link them here.

Describe also the *human* resources needed. how many teachers are needed to implement the lesson. Is a field trip designed in as part of the lesson?

**Evaluation**

How will you know that this lesson was successful? Describe what student products or performances you will be looking at and how they will be evaluated.
Teachers have found rubrics to be very useful in providing guidance and feedback to students where skills and processes are the targets being monitored. Examples of skills or processes that adapt well to being rubriced include: the writing process, the application of the method of scientific inquiry, thinking skills (i.e. constructing support, comparing, problem solving, analysing and synthesising information),

Methods other than rubrics are aimed at measuring information known by a learner. These methods may include tests, quizzes, checklists, etc.

Rubrics have the potential for helping a teacher assess a student performance during the teaching/learning process by clearly establishing the standards and quality expectations. It assists in customizing the student feedback: what a student has done well; what weaknesses exist; and how or what might be done to correct or improve the performance. It assists students in the fair and honest opportunity for self assessment of their work and allows them the opportunity to set, monitor, and achieve their personal learning goals. It helps students and parents in understanding the tasks and the standards by which the progress will be measured.

**Conclusion**

Make some kind of summary statement about the worthiness of the lesson and the importance of what it will teach.

**FINAL THOUGHTS**

There are several free online tools, templates that helps teachers to create their own webquest. Thus creating a WebQuest is not only for the techno-savvy educators.

In my opinion the first step for a teacher who would like to give a webquest a try with his/her students is to search the Internet for an already existing webquest in a topic that is close to his/her students interest. The sample webquest on mobile phones could be
one such a first webquest that a teacher might use. If the project is well-received by the students and the teacher finds it rewarding then the educator should start planning his/her own webquest that will match the Nanoyou dilemmas.

To sum up the benefits of webquests I once again highlight some very good reasons for taking the trouble to deal with this online learning model:

- Like any carefully planned lesson, a good webquest makes learning interesting for students.
- Webquests let students work at their own pace, either individually or in teams.
- They also let students explore selected areas in more depth, but within limits that the teacher selects. This makes webquests ideal for mixed-ability classes.
- Webquests offer an approach to teaching the value of research.
- Webquests can increase the "comfort level" of students using the Internet for learning activities. A properly designed webquest can help students become creative researchers rather than simply "surfing" from one site to another.
- It enables students to develop critical thinking skills.
- It helps language acquisition by giving a great opportunity for students to learn inadvertently during the course of the project.
- It can develop listening, reading, writing and oral skills as well since the materials the students interact with are mostly authentic multimedia materials and the task students have to cope with is a real-life task.
- Furthermore the project outcome is showcased on the web therefore it is public for a wide community.
WEBQUEST ON A PARTICULAR ETHICAL ASPECT OF NANOTECHNOLOGY

Is it acceptable to use processes developed for medical treatment to enhance the human body?

INTRODUCTION

In this WebQuest, students are expected to do some Internet research on the ethical aspect of nanotechnology. They will learn about nanotechnology in general and about one particular ethical issue that is attached to its possible future use. They will find out what nanobots are and what they are made out of, and how they might work to manipulate individual atoms and molecules. They discover what nanotechnology could be used for, and how it may cause a revolution in the medical field. Finally, they will debate the following statement:

*It is acceptable to use processes developed for medical treatment to enhance the human body.*

Students will play the roles of different people (scientist, patient, ethicist, multi-millionaire, representative of a private medical center, child) and will have to debate the issue by representing the viewpoint of the particular person they represent.

Students should offer very convincing arguments and try to reach a consensus on the issue.

TASK

This WebQuest will involve you and your group in a discussion concerning the ethics of Nanotechnology. Therefore, it is important for you to know a little about ethics and of course nanotechnology before you end up in a lively debate on whether it is acceptable to use processes developed for medical treatment to enhance the human body or not.

While you are doing your Internet research, you will be able to gain a general understanding of what nanotechnology is and how it may be applied. You are expected to compile information so that you could have a proper ground to argue the issue in question.

Objectives
• Learn about the basics of nanotechnology (its purpose and the areas in which it could be used).
• Learn how to argue and debate a certain topic.

RESOURCES

Students will use the Internet links given to find out all about nanotechnology. They will learn about the reasons scientists are interested in it, and will find out what the uses of nanotechnology might be in the future.

Examine these definitions of "Ethics" available online:

Ethics (what it is) HOMEWORK

- [http://www.askoxford.com/results/?view=diet&amp;field-12668446=Ethics&amp;branch=13842570&amp;textsearchtype=exact&amp;sortorder=score%2Cname](http://www.askoxford.com/results/?view=diet&amp;field-12668446=Ethics&amp;branch=13842570&amp;textsearchtype=exact&amp;sortorder=score%2Cname)

Technology and innovations under scrutiny HOMEWORK

How has the TV-dinner changed eating habits in America and what implications it had on families?
[http://news.bbc.co.uk/2/hi/americas/4703523.stm](http://news.bbc.co.uk/2/hi/americas/4703523.stm)

This article is about the Amish, who have an elaborate system by which they evaluate the tools they use.
[http://www.wired.com/wired/archive/7.01/amish_pr.html](http://www.wired.com/wired/archive/7.01/amish_pr.html)

Nanotechnology

• Do you want to know more about Nanoscience and Nanotechnologies? Watch NANOYOU's video and discover the secrets of the Nanoworld.

• NANOYOU has prepared some power point presentations to introduce you to the Secrets of the Nanoworld and to the Benefits and Risks that nanotechnologies can represent for the developed and the developing countries.
NANOYOU has prepared some posters to introduce you to Nanoscience and to the applications of nanotechnologies in medicine, environment and ICT.

The most relevant posters for this webquests are the following:

*How is Nano special* and *Nanotechnology in Medicine*

You could also find interesting videos on nanotechnology on YouTube, Watchknow and Google Videos:

- [http://www.youtube.com/user/NANOYOUproject](http://www.youtube.com/user/NANOYOUproject)
- [http://www.youtube.com/watch?v=MnOX-FHnB6E](http://www.youtube.com/watch?v=MnOX-FHnB6E)

*Nanotechnology superhuman*

Here you can find many links to articles and multimedia files that are dealing with the use of nanotechnology for medical treatment in order to enhance the human body.

- [http://mashpedia.com/nanotechnology + superhuman](http://mashpedia.com/nanotechnology + superhuman)
- [http://www.ethicsweb.ca/nanotechnology/](http://www.ethicsweb.ca/nanotechnology/) (ethical aspects of Nanotechnology)

**PROCESS**

1. Teacher introduces the webquest and elicits information trying to find out what students know about nanotechnology and what they think about the articles they had to read prior to the lesson (it is recommended to use a laptop with projector and a free mindmapping software to record students’ answers)
2. Students use the resources section and explore the webquest topic. They interact with the materials which have been provided to them and should even explore some further materials at the Mashpedia site. While doing their research students
create their argument map (mindmap) (using a free mindmapping tool e.g. SciPlore http://www.sciplore.org/about_en.php)

3. After having gained basic understanding of nanotechnology in general and the dilemma in particular students present their perspectives.

4. After the presentations a class discussion could take place.

As an alternative the following scenario could happen:

Group discussion (Game procedure)

Part 1 – Preparations

- Download the role play cards from the Nanoyou site http://nanoyou.eu/attachments/090_Super%20human%20Bone%20enhancement%20final .pdf

- Each group gets one set of cards.

- Each member one stakeholder card.

- One of the group members reads (loudly for the entire group) the "dilemma card".

  * Make sure that everyone understands the dilemma

Part 2 - Share your opinion and Discuss the dilemma with others

- Study the dilemma and represent your stakeholder opinion based on the information on your stakeholder card.

- Relate /Respond to other stakeholders' opinions.

  * Clarify what your opinions are

  * Let your voice be heard

  * Remember: knowledge is necessary to create an opinion and to convince group members

Homework

Students should debate this particular issue further at http://www.debate.org or choose another Nanoyou dilemma to discuss it online. There are altogether 10 sets of cards with different dilemmas for the grade level 11-13, 14-18. The card games can be downloaded from the website. The cards can then be printed on A4 paper or cardboard. For best results, use 160g/m2 paper
CONCLUSION

Using information gathered from the Internet, students should be able to get an overall picture about nanotechnology. They should be able to draw some conclusions about the usefulness of nanotechnology as a result of their research and to argue the proposition in accordance with the role play card game and the information they harvested from the Internet.

EVALUATION

<table>
<thead>
<tr>
<th>Multimedia Presentation Rubric</th>
<th>Possible Points</th>
<th>Self-Assessment</th>
<th>Teacher Assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Provided depth in the topic coverage. Point of view clearly given.</td>
<td>10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clear explanations and reasons for conclusions given</td>
<td>10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Handouts are well designed and useful.</td>
<td>10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Presentation was well organized and flowed well.</td>
<td>10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>All references clearly given. Others can locate the sources used.</td>
<td>10</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Total

Rate each category according to the following scale: 9-10 = excellent, 7-8 = very good, 5-6 = good, 3-4 = satisfactory, 1-2 = poor, 0 = unsatisfactory
WEBQUEST ON MOBILE PHONES

(sample webquest)

INTRODUCTION:

Your parents are willing to give you some money so that you can buy your mobile phone. Nevertheless, they want you to be aware of the pros and cons of the use of the gadget and would like you to convince them that the pros outweigh the cons. Therefore, before you get the phone you must do some research. First and foremost, explore the advantages and disadvantages of the gadget and gather information to convince them that you really want the handy. Also you will have to explain them which phone and service you would like to buy and why.

TASK:

Since your parents are willing to permit you to select you own mobile you must convince them as to why you want the phone. You will have to write a persuasive essay after having done through research in the field. You will also create a presentation on your phone and the service you will choose, which will then be presented to the class.

PROCESS:

1. Use the following websites to research the mobile phone industry. Each article will provide you with important information about making a wise cell phone and service plan decision. These websites will help you collect information and to build your persuasive paper and create your informative presentation. Be sure to take notes while reading the articles! You are not limited to just these websites.

2. Use the question under each website to help guide you as you take notes.

Cell Phones
http://simple.wikipedia.org/wiki/Mobile_phone
How do mobile phones work?
Pros and cons of mobile phones

You should use the Procon list site (http://www.proconlists.com) to brainstorm pros and cons before you do research. This would get you thinking about the subject first and you could then look back at your own lists and see how they could be changed or modified. See an example below.

Mashpedia (http://mashpedia.com/) is a great site for you to research a topic.

http://www.ehow.com/about_5454493_pros-cons-mobile-phones.html
What are the pros and cons of using mobile phones?

Prepaid vs. Traditional Wireless
http://www.prepaidreviews.com/prepaidvstraditional.html
What are the advantages and disadvantages of prepaid wireless and traditional wireless?

How to Compare Prepaid Cell Phone Plans
Kids and Cell Phones

What information did you learn about kids and cell phones?

Cell Phones for Kids Under 15: A Responsible Question

What are the pros and cons of kids having cell phones?

3. Use a graphic organizer to organize your thoughts and information collected as you research mobile phones and different services. Below are several websites with free graphic organizers (mindmapping tools).

Graphic organizer Websites: (also see some relevant charts and example in the Annex)

http://www.eduplace.com/graphicorganizer/ these are free accessible graphic organizers to help organize thoughts.
http://freeology.com/graphicorgs/index.php graphic organizers are plain in appearance and allows students to create their own look to the organizers.
http://www.eduplace.com/kids/hme/6_8/graphics/ put your ideas and notes in order with these graphic organizers
http://www.sdcoe.k12.ca.us/score/actbank/sorganiz.htm explains the usage of various types of graphic organizers

4. Using the knowledge that you gained in section 1 of the Process, begin researching the cell phone of your choice. Be sure to organize your thoughts in your graphic organizer. You must select one phone. Keep in mind that you want to persuade your parents to buy you that particular phone for you.

4. You will need to select a service plan for the phone you have selected. Use your graphic organizer to organise your thoughts. Keep in mind that you have to persuade your parents to pay your bill.
   - Be sure to take into consideration how many minutes that you anticipate using
   - Think about “free night and weekends”
   - Think about “mobile to mobile”
   - Think about internet access
   - Think about “text messaging”
   - Think about “games” you would like to play on your phone
5. Create a presentation to your peers your final selection for a phone and service plan. You must include detailed information about the pros and cons of mobile phones, your plan and phone, your graphic organizers, a picture of the phone, service plan details.

**Presentation tools:**

PowerPoint  
Glogster  
Prezi  
[http://prezi.com/](http://prezi.com/)

6. **Next,** using your research write a persuasive essay to your parents describing the phone, the service plan, and why you think your parents should buy it. Use the following websites to help you write a persuasive essay to your parents.

[http://www.studygs.net/wrtstr4.htm](http://www.studygs.net/wrtstr4.htm)  
[http://www.abcteach.com/Writing/persuasive.htm](http://www.abcteach.com/Writing/persuasive.htm)

These aforementioned websites explain how to write a persuasive essay.

**EVALUATION:**

Ratings:
Score of 5 = Performance is above the usual expectations, it is outstanding  
Score of 4 = Performance is at the level of expectation  
Score of 3 = Skills and standards are slightly below the average of expectation.  
Score of 2 = Skills and standards are acceptable but improvements are needed to meet expectations well.  
Score of 1 = Performance is weak; the skills or standards are not sufficiently demonstrated at this time.

<table>
<thead>
<tr>
<th>Criteria</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
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</tbody>
</table>
The **Pro Con list** explains the advantages and disadvantages of having a mobile phone.

The **Graphic Organizer** explains the mobile phone and service plan in detail, as well as the pros and cons of the use of mobiles. The details are clear and concise.

The **list** of reasons why you selected the cell phone has thorough explanations for selection.

The **list** of reasons why you selected the service has thorough explanations for selection.

The **presentation** includes all required information.

The **presentation** reflects student creativity in displaying appropriate phone information.

The **persuasive essay** has examples which are specific and relevant.

---

**CONCLUSION:**

Now that you have completed this WebQuest experience researching the pros and cons of mobile phones, the different options and services, you have acquired the necessary skills to make sensible consumer decisions as well as skills in convincing others to see your point of view.

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**RECOMMENDED TOOLS, SITES AND IDEAS FOR DISCUSSING ELSA**

**PRO CON LISTS** [HTTP://WWW.PROCONLISTS.COM/](http://WWW.PROCONLISTS.COM/)
Pros and Cons as Web Based Research Tasks (from Nik Peachey’s blog entry)
I'm always looking for handy tools that students can use as follow up tasks to online research and Pro | Con Lists certainly looks like a good one.

The site enables students to collect together the advantages and disadvantages of a particular subject and create a list of each to see how they balance out.

Here's an example one on Solar Energy

As you can see, at the top of the page is the list of pros and cons,

When creating the list students can also add to or reduce the influence of some factors and balance emotional and rational factors of each too.

It sounds complicated, but these are very easy to produce. Just register and log in and go to 'Create a list'. Give the list a title, select the topic and add a description. You are then ready to start adding the pros and cons.
Each of the pros and cons added has a default weight of 3 in both the emotional and rational settings, but students can click on the numbers to increase or decrease the weight if they think the pro or con is more or less significant.

Once they have completed their lists they can publish them or share them through a range of social media platforms.

Visitors to the lists can then leave comments or agree or disagree with each of the individual pros and cons in the list, simply by clicking on them and voting.

To see how this works I've created a short Pro and Con list on the topic of Interactive Whiteboards. Feel free to comment and suggest more pros and cons.

- **Pros and Cons of Interactive Whiteboards**

I think Pro | Con Lists is a great way to follow up web based research activities and would work really well combined with something like [Mashpedia](#).

- Students could go to the [Mashpedia](#) site and search for information on something like wind power, solar power or even different political parties or sporting teams, then use the information they find to create their list of pros and cons.
- Once the lists are created they could share them with other students and vote on whether they agree with the pros and cons.
Students could also use the site to brainstorm pros and cons before they do research. This would get them thinking about the subject first and they could then look back at their own lists and see how they could change or modify them.

What I really like about the site is that it gets students thinking and evaluating the power of their arguments too.

It would be nice if the lists could be added to by visitors, but that doesn't seem to be possible, but I still think this is a really useful tool and one that can be used to create research based reading and listening tasks.

I hope you like it and find it useful.

Source : Nik Peachey “Pros and Cons as Web Based Research Tasks”
Online  2010

MASHPEDIA (HTTP://MASHPEDIA.COM)
Create Authentic Web Based Research Tasks With Mashpedia
I've just discovered Mashpedia and I have to say I really like it. It's a combination of a search engine and an encyclopedia. It's very simple to use, you just type in a search query and hit search.

The site will then generate a page of information links about your search topic. It collects information from multiple media and different sources from books, blogs, text images to video and even Twitter references.
Here's a couple of example pages I created, just click the titles to see the pages compile themselves.

**Learning technology**

- Jimi Hendrix
- London Zoo
- Barcelona
- The European Union
- The Oud

This is a great tool for creating reading and research tasks for students, based around authentic materials. It creates genuine web based reading tasks that demand that students assess clues to text content from multiple sources before exploring the links, then read or watch for gist to check relevance before reading / listening more deeply for specific information.

The pages will always create similar though not identical content so don't create very specific reading and research tasks, make sure the tasks are general and more generic.

Here are some possible reading / research tasks you could use which would work for most topics:

- Get students to look at the information and use it to create a quiz on the topic. They find information that interests them and write questions to quiz the rest of the class.
- Set students to find 5 - 10 facts about a topic. You could stipulate some of these need to be negative aspects and some positive to make it more challenging.
- Get students to search the page and decide which of the sources it links to is the single most informative or interesting.
- Get students to research a topic and create a multimedia poster about it using text, images and video embedded. You could use something like Glogster for them to show their results.
• Get students to research a topic and create a short documentary or news report about it. If you have access to a video camera you could video their presentations.

Of course you still have to be careful with younger students as you can't control what comes in to the page, and also expect much less of lower level students and set them quite simple tasks, perhaps as simple as pulling out some images and describing them etc.

This is a great way to generate web based reading tasks from authentic materials that students can access in an authentic way. I hope you find Mashpedia and these suggestions useful.


BIG THINK HTTP://BIGTHINK.COM/
An excellent website to help you get your students thinking on different issues. Lots of very respected experts share their opinions on a range of subjects like for example on mobile phones (http://bigthink.com/search?q=cell+phones&x=0&y=0) and nanotechnology (http://bigthink.com/search?q=nanotechnology&x=0&y=0).

WORDSMYTH ONLINE GLOSSARY MAKER
(HTTP://WWW.WORDSMYTH.NET/?MODE=GM)

This is an online glossary maker. It can come very useful if the students use authentic texts. Unfortunately, it seems it will soon be limited to registered users only.
15 WAYS TO SIMPLIFY READING TEXTS

Here are some tips and hints as to how to simplify reading texts so that students can be exposed to massive comprehensible input.
1. Shorten
It is difficult for a native speaker to appreciate just how much the length of a text can make it difficult to understand due to factors like not being able to find the right information to answer a question and the brain getting tired halfway through. “In the case of news stories…one can generally edit from the bottom up, cutting paragraphs until the required length is reached…[with] other texts…one approach is to read the text a couple of times, put it aside and then write a summary of the length the students can manage” (How to Teach for Exams, Longman, pg 36)

2. Pre-teach
Interesting ways of pre-teaching vocabulary they might need to understand in order to cope with the text include guessing the story from the pre-teach vocab and reading to check, or brainstorming a category of vocab that includes the pre-teach words and expressions. As well as vocabulary, you might need to pre-teach grammar, cultural information, or information about the kind of genre the piece of writing is.

3. Introduction
If you can write a brief introduction to the text, you can get students to read this first with one or two easy tasks as a kind of pre-teach whilst also warming up their reading skills. You can also combine this with a real vocab pre-teach stage by including all the words you want to pre-teach in the introduction, perhaps highlighting them so students notice that they are important. An introduction could include a summary of the whole story with the most interesting bits left out, the background to a news story, explanation of why the text is important and/or interesting, or instructions on how they should read the following text and what they should look for.

4. Questions that give clues
A way of achieving the same thing as an introduction without adding an extra paragraph of text is to write the questions they read before the text so that they give clues to what they will be reading. This can be combined with the pre-teach stage by including the difficult vocabulary etc in the questions and answering queries about vocab before students start reading.

5. Glossary
Whilst having a glossary slows down reading speed and is not popular in present EFL textbooks, some language exams and self-study materials still include texts with a glossary at the bottom of the page. It is also fairly common in graded readers. An advantage of a glossary is that it is much quicker and easier for the teacher to write than actually changing the text.

6. Headings
Another thing you can easily add to a text which aids comprehension is paragraph headings, for example to make a newspaper article look more like a magazine article. This gives students clues as to what information is coming next and makes it easier to find information when answering detailed comprehension questions. If an authentic text
already has paragraph headings, these are often written in a stylish or witty way and can be easily and usefully simplified.

7. Conversation
Talking about the topic that they will read about can help prime students to guess which of several meanings a word they get stuck on in the text has. Being able to predict what they are going to be reading next and just read to check also increases reading speed. Easy ways of starting a discussion that will help their comprehension include predicting the story from the headline or key words, or predicting the answers of true/ false questions before reading to check.

8. Pictures
Adding pictures to a text that doesn’t have them helps lighten the load of looking at a page of text and so make it less daunting, and can be used for vocabulary pre-teach and conversation before reading to set the scene. Students can also put the pictures into order or match them to words, sentences or paragraphs in the text much more easily than similar tasks written down.

9. Vocabulary
The easiest way of knowing what vocabulary to replace when rewriting a text to make it easier to understand is to look in a learners’ dictionary of the same level as your students. If a word in the text is not in the Elementary/ Intermediate/ Advanced Learners’ dictionary and is important for overall understanding and/ or to answer the comprehension questions you should replace it with an easier word. Words that are not so vital for understanding can stay to give students practice in ignoring them. If your main purpose is improving reading survival skills like this you can make up for difficult vocabulary with easy tasks, but 90-98% of the vocabulary should be at the right level if you want students to pick up language from the text.

10. Grammar
Although the grammar in the text can be set at the level of structures students can understand rather than the easier ones they can produce, and can also include more difficult structures if they aren’t important for the tasks, most authentic texts will include some grammatical forms that are worth simplifying so students can concentrate on something else.

11. Format
One of the easiest ways of rewriting a text and making a major change to its ease of understanding is to write it as a completely different genre of text. Easy forms for students to understand include notes, postcards and emails. For example, a magazine article about a holiday could be rewritten as a letter from someone taking that holiday.

12. Familiarity
Students can often be put off by unfamiliar place names, people’s names, names of foods etc. that are not important for the comprehension of the text. Although these things can provide useful practice is spotting words that can be ignored or in widening their
international outlook, in texts that are challenging in other ways and in which you want them to concentrate on one thing you could try changing these things to something more familiar such as the name of a local city.

13. Reference
Another major difficulty that native speakers rarely spot is the problem of keeping track of what “it”, “that man”, “one of those” etc refer to. This is often a skill students have in their own language that they lose when overloaded by other things when reading English, but this can particularly be a problem with reference words that do not easily translate such as “one” in “give me one” or when the students speak a language that uses these kinds of expression less often. You can replace all these kinds of words with simple pronouns like “he” or the names, but be careful not to go too far and make it an unrealistic text in English.

14. Markers
Another thing that real English texts do not have a lot of is expressions such as “on the other hand”, as a skilled writer will write the text so the organisation of ideas will make the logical connections between sentences obvious. Adding these to the text can not only help the students understand how the text is organised and so predict what information is coming next, but can also teach them the kinds of expressions they will need to include in their IELTS Writing etc until they reach the same level of writing skill.

15. Ideas
Another difficulty that can throw students who can cope with it in L1 is dealing with mentally challenging concepts in texts at the same time as mentally challenging English language. Although you don’t want to explain what they will read so much that they learn nothing when they read it, you can give some help with a kind of “ideas preteach” or true/false questions based on the ideas before they read.

Source: Alex Case “15 ways to simplify reading texts”
Create EFL / ESL Lesson Plans in Mins

I've often seen sites making this boast, but this really does seem to be the case with Lesson Writer. The website takes you through the various stages of preparing text based lesson plans for EFL / ESL students.

You just copy and paste in a text, the site analyses the vocabulary and produces a glossary of the vocabulary which you can customise, example sentences using the vocabulary, as well as grammar and pronunciation tasks and activities. You then just add your own comprehension questions and print the whole thing up along with a suggested plan!

There a Lesson Writer Demo

I'm not so sure about copying and pasting in copyright materials, but as long as you have permission then this is a great way to produce relevant lesson materials from authentic sources and it won't take you all day to prepare them.

If you register on the site you can save the lesson plans and materials, and it doesn't seem to cost anything!

Source: Nick Peachey “Create EFL / ESL Lesson Plans in Mins“
CREATE A QUICK DISCUSSION FORUM

I'm not sure how many people still use text based threaded discussion forums, but if you do Forumotion is a pretty powerful tool with some nice features that you can use to set one up for free. It's very quick and you don't need any technical skills or hosting.

 Basically you just go to http://www.forumotion.com/, and click on 'Create a free forum'.

You'll then be able to select from a range of different template designs.

Once you've chosen the one you want you fill in the details of your forum and create a password.
You'll then be ready to activate your forum and start using it. The best place to start is on the Administration Panel. Here you can get some tips on how to get started and how to get your forum registered with search engines etc.

If you want to see what a forum can look like and try it out, there's one here which I
Forumotion has some nice features and is pretty simple. There is also a newsletter function so that you can send messages to all the members of your forum.

This is a handy tool if you are teaching distance classes, or would just like to set up some simple online discussion topics for your students. It also looks like they are taking their responsibilities seriously regarding e-safety too, though you should still read the terms of use, as there is some sharing with third parties of non-personal information.

Source: Nik Peachey “Create a Quick Discussion Forum”
Online 2009

DEBATE ORG HTTP://WWW.DEBATE.ORG

Debate.org is a membership-based online debating service designed to provide an easy and free system for our members to intellectually challenge, debate and communicate with each other on the Web. Members create their own unique profiles and our technology provides a "ratio of disagreement" with the other members based on the information that each member provides, making it easy to select an opponent or to build group of friends. Members can challenge existing members or invite anyone to come and debate them on a topic of their choice selected from a wide range of categories including
Politics, Sports, the Arts and Entertainment. A formal debate is between two members, the instigator and contender; but every member can participate in the debate by posting comments and voting on the winner once the closing arguments are presented. Debate.org launched its 3rd generation in August of 2008 which includes a laundry list of new features including new voting technology, debate and member ranking, photo albums, messaging, advanced searching, YouTube video integration, demographic charting and a friends and networking system. Debate.org is evolutionary in nature and will continue to add new features to encourage further education, discussion and communication among the members.

IDEbate.org, http://www.idebate.org/

Today, from Haiti to Serbia, from The Netherlands to Mongolia and beyond, IDEA debates are gaining ground as forums for promoting democratic values. And just as Socrates spurred his listeners to examine their assumptions 2,500 years ago, IDEA is today encouraging students around the world to question, to listen to each other, and to explore even the most volatile subjects openly and in the spirit of tolerance and cooperation.
Mobile phones, use by children

Debatabase Junior Topic

Summary: Should children be allowed to own and use mobile phones (cellphones)?

Introduction

Author: Alastair Endersby (United Kingdom) Alastair learnt to debate at the Cambridge Union but discovered his real talents lay in coaching when he started teaching. He has twice coached England teams in the World Schools Debating Championships. Alastair currently teaches History and Politics at Bishop Wordsworth's School in Salisbury, England. He is the Editor of Debatabase.

Created: Tuesday, June 05, 2007
Last Modified: Saturday, June 19, 2010

Context

Mobile telephones (known as cellphones in America) have only existed for twenty years. In the past decade they have become very widespread with almost every adult in developed countries now owning a small portable phone. Modern phones can perform a wide variety of functions, such as taking and sending photographs and video, playing music and games, and even surfing the internet. Their main use, however, remains for voice calls and for texting short messages. As prices of both phones and calls have come down in the past ten years or so, they have become much more affordable for young people. This has raised questions about whether children should be able to own phones, and if they should be allowed to take them into school. Schools in different countries, and within countries, take very different views on this issue. In some students can carry them as they like, as long as they are off during lessons. Other schools allow them to be carried, but say they must never be turned on in school hours. Some (for example, New York schools recently) ban them entirely.

Arguments

<table>
<thead>
<tr>
<th>Pros</th>
<th>Cons</th>
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<tbody>
<tr>
<td>Mobile phones are safe for children to use — we should ignore scare stories in the media. The latest research says that mobile phones do not damage brain cells. Even those earlier studies that suggested there might be a problem thought that people would have to use a cell phone for hours a day for there to be an effect. It is true that there is no 100% proof mobile phones are safe to use, but that is true of any scientific study.</td>
<td>There are possible long-term health risks from using mobile phones. Some research suggests that the radio waves from mobile phones may harm people's brains. Because children's brains are still developing, any possible damage to them is even more worrying than for adults. It is true there is no total scientific proof about this, but it is better to play safe than take risks — the precautionary principle. Until science can prove mobile phones are completely safe for young people to use, they should not be allowed to have them.</td>
</tr>
<tr>
<td>Mobile phones keep children safer, as it is easier for parents to stay in touch with their children.</td>
<td>Mobile phones make children less safe. Firstly they are carrying an expensive item that makes...</td>
</tr>
</tbody>
</table>

are right! Fight for you side! Battles are one on one debates with another member of ConvinceMe.net. You can create a general challenge, or challenge an individual. Then you argue, add evidence, and convince other members to give you their vote. The winner takes all. King of the hill is a little like open debates, except that you get one main argument, and your goal is to convince members to give you the points. The first person to get 10 points wins, and is crowned king of the hill.

Should children under the age of 16 be allowed to own or to use a cell phone?
Technology
May 21, 2009
Share - Watch - Flag

Add an Argument
4 Yes, children under the age of 16 should be given a cell phone.

Add an Argument
1 No, children under the age of 16 shouldn't be given a cell phone.

thoughtcriminal
May 21, 2009
Rebuttal

This is an argument for using a hands-free headset when making calls, not an argument for restricting access. The transmitter remains in the phone, so it's not moved close to the user's head.

mesmerized
May 21, 2009
1 convinced
Rebuttal

There are possible long-term health risks from using cell phones. Anyone who uses a cell phone is exposed to radiation, which remains unseen and unknown to many users. Children, especially, are most likely to get affected in the future, since their brains are less dense and absorb far more radiation than adults. Therefore, if this is true, absorbing more radiation means kids are more susceptible to brain cancer and other disorders like leukemia or autism.

In speaking about how children shouldn't be given cell phones, Dr. Lennart Hardell, a professor in oncology and cancer epidemiology at the University Hospital in Orebo, Sweden, stated: "Kids should definitely not be using cell phones, according to our research. We looked into a group who started using these devices before the age of 20 and the study showed a five times greater risk for rare brain cancer."

Consequently, if cell phone use isn't limited, it wouldn't be surprising if the death rate for adults increased in the upcoming decades.

frankie4189
May 21, 2009
1 convinced
Rebuttal

Restricting kids from using cell phones is like restricting independent rights - freedoms integral to Democratic society.

If a kid and the parents are aware of the dangers of brain cancer and minute radiation, then it is their choice - not the choice of the Government.

Mind, I wouldn't think it a bad thing if some of those kids got off the
Debatewise was created for people who like making informed decisions. This is a place where the best possible arguments for one side are listed next to the best possible arguments against. These arguments aren't created by one person, but by like-minded individuals collaborating to form the strongest case. This allows people both to easily compare the pros and cons and also to come to a decision safe in the knowledge they have the best information to hand.

Source: [http://debatewise.org/debates/1831-are-cellphones-safe](http://debatewise.org/debates/1831-are-cellphones-safe)
TruthMapping.com is a free tool that provides a focused, rational method for adversarial discussion that overcomes the limitations of standard message boards, e-mail and even conversation; it is a site for persons who believe that reasoning should be at the heart of public debate.

Some recent TruthMapping topics:

<table>
<thead>
<tr>
<th>Topic/Category</th>
<th># Agree</th>
<th>Published</th>
</tr>
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<tbody>
<tr>
<td>Smoking should be banned from public places</td>
<td>1</td>
<td>August 5, 2010</td>
</tr>
<tr>
<td>Social Issues</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Education should be free of charge</td>
<td>1</td>
<td>August 5, 2010</td>
</tr>
<tr>
<td>Social Issues</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Debunking Animals can't sing</td>
<td>1</td>
<td>July 12, 2010</td>
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<td>Are Most Topics Invalid?</td>
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The goal of Argumentum is to provide a better way for people to argue online. In most digital discussion mediums, such as forums, blogs or email, the arguer is forced to respond to an entire argument all at once. While this may be OK in an email, since there are usually only a few parties involved, this method of responding (all at once) is responsible for the chaos and disorder that is clearly evident in the forums, message boards and the like. On Argumentum, you can address multiple points.. one by one, by posting multiple follow-up arguments. This naturally breaks down the original argument into a set of propositions, thus making the system much more logical, scientific and stimulating.
With VoiceThread, group conversations are collected and shared in one place from anywhere in the world. All with no software to install.

A VoiceThread is a collaborative, multimedia slide show that holds images, documents, and videos and allows people to navigate slides and leave comments in 5 ways - using voice (with a mic or telephone), text, audio file, or video (via a webcam). Students could therefore easily add their comments to a video, picture or document. The comments are sequenced, so that late-comers can follow the dialogue.

VoiceThreads can even be embedded to show and receive comments on other websites and exported to MP3 players or DVDs to play as archival movies.

(sample from http://voicethread.com/?#q+pro+and+con.b9973.i69066)
Compendium is a hypermedia software tool, providing a visual interface for mapping the connections between people, ideas, multimedia documents and websites, to support the analysis of socio/technical problems. You can customise the icons and links to anything you want, but it comes preloaded with the visual language for IBIS: Issue-Based Information System, which supports the mapping of debates in terms of Issues, Ideas, Pros/Cons/Arguments, and Decisions (see illustrations). Students could use Compendium to manage the digital information they harvest from the Internet, since they can drag and drop in any document, website, email, image, etc, organise them visually, and then connect ideas, arguments and decisions to these and present them in the classroom.
At its core, the Visual Understanding Environment (VUE) is a concept and content mapping application, developed to support teaching, learning and research and for anyone who needs to organize, contextualize, and access digital information. Using a simple set of tools and a basic visual grammar consisting of nodes and links, faculty and students can map relationships between concepts, ideas and digital content. VUE is a flexible tool to help students integrate, organize and contextualize electronic content in their work. Digital content can be accessed via the Web, or using the VUE’s “Resources” panel to tap into digital repositories, FTP servers and local file systems. Sharing and presenting information are important aspects of academic work. VUE’s pathways feature allows presenters to create annotated trails through their maps, which become expert guided walk-throughs of the information. The pathways feature also provides a “slide view” of the information on the map. The power of VUE’s slide mode is the ability for presenters to focus on content (slide view) while preserving the information’s context (map view), by way of a single toggle between the two views.
SciPlore (originally Scienstein), a non-profit project, aims to support researchers in searching and evaluating scientific publications and offer tools to ease their daily work. SciPlore MindMapping is the first mind mapping tool focusing on researchers’ needs by integrating mind mapping with reference and pdf management.

The IHMC CmapTools program empowers users to construct, navigate, share and criticize knowledge models represented as concept maps. It allows users to, among many other features, construct their Cmaps in their personal computer, share them on servers (CmapServers) anywhere on the Internet, link their Cmaps to other Cmaps on servers, automatically create web pages of their concept maps on servers, edit their maps.
synchronously (at the same time) with other users on the Internet, and search the web for information relevant to a concept map.

CmapTools is used worldwide in all domains of knowledge and by users of all ages to graphically express their understanding. In particular, CmapTools is used in schools, universities, government organizations, corporations, small companies, and other organizations, both individually and in groups, for education, training, knowledge management, brainstorming, organizing information, among other applications. The collaboration and publishing features provide a powerful means for representing and sharing knowledge.

The IHMC CmapTools client is FREE for use by anybody, whether its use is commercial or non-commercial. In particular, schools and universities are encouraged to download it and install it in as many computers as desired, and students and teachers may make copies of it and install it at home.

There is a downloadable Cmap server at this page: http://cmap.ihmc.us/download/dl_cmapserver.php
If a school sets up such a server then this would enable students to work on concept maps collaboratively with their foreign peers all across Europe or for that matter even across the whole world. The concept maps could reflect the local and national aspects of the topic/dilemma dealt with in the classroom.

The following highly recommended article gives the underlying theory of using the Cmap tools: http://cmap.ihmc.us/publications/researchpapers/theorycmaps/theoryunderlyinconcepmaps.htm
BIBLIOGRAPHY

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http://www.ifets.info/journals/4_1/discuss_summary_nov2000.pdf


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Blasszauer, J "Enlargement Webquest” Online 2004
http://www.reocities.com/bjohnnyus/Enlargement.htm

Bruner, J "Constructivist theory" (an overview) Online
http://tip.psychology.org/bruner.html 1990
CORELL journal Online http://www.ucam.edu/corell/issues/issue-3-2010 2010

Dodge, Bernie. "Some Thoughts About WebQuests." Online

Dodge, Bernie. "Schools, Skills and Scaffolding on the Web" Online
http://edweb.sdsu.edu/people/bdodge/scaffolding.html 1998


National Center for Education Statistics Online http://nces.ed.gov/

Nanoyou Role Play Cards

Nestor Map  (free software) http://www.gate.cnrs.fr/~zeiliger/nestor/nestor.htm


Rubrics for web lessons Online
http://edweb.sdsu.edu/triton/july/rubrics/Rubrics_for_Web_Lessons.html

http://www.bie.org/research/study/review_of_project_based_learning_2000

USA at Technology Counts Online http://www.edweek.org/ew/tc/index.html 2010

Webquest materials Online http://webquest.sdsu.edu/


RECOMMENDED SITES

Nanoyou Project Website
http://nanoyou.eu/

Nanoyou Role Play Cards

Nanoyou Virtual Dialogue

Museum 2.0 coLAB
http://www.museumtwo.com/colab.html

WebQuest Check List
http://webquest.sdsu.edu/processchecker.html

WebQuest Design Process
http://webquest.sdsu.edu/designsteps/index.html
WebQuest Example
http://www.teacherwebquest.com/WQ/HighSchool/CollegesWQ/index.html

WebQuest Search
http://webquest.org/index-research.php

WebQuest Taxonomy
http://webquest.sdsu.edu/taskonomy.html

WebQuest Templates
http://webquest.sdsu.edu/templates/lesson-template1.htm

The best way to use WebQuests
http://www.thirteen.org/edonline/concept2class/webquests/demonstration.html

WebQuests Course Map
http://www.mapacourse.com/webquesthtml/

WebQuests Evaluation Rubric
http://webquest.sdsu.edu/webquestrubric.html

WebQuests for the Classroom
http://www.readingonline.org/articles/art_index.asp?HREF=/articles/stinson/

WebQuests Learning Environment
http://eduscapes.com/sessions/travel/index.htm

WebQuests Lesson Plan
http://www.thirteen.org/edonline/concept2class/webquests/demo_sub1.html

WebQuests ny Dr. Nellie Deutsch
http://www.nelliemuller.com/WebQuestsbyNellieDeutsch.htm

Building Blocks of a Webquest
http://projects.edtech.sandi.net/staffdev/buildingblocks/p-index.htm

Receptive scaffolding http://eduscapes.com/distance/course_guides/reception.htm
Transformation scaffolds
http://eduscapes.com/distance/course_guides/transformation.htm
Production scaffolds http://eduscapes.com/distance/course_guides/production.htm

Filamentality
Filamentality is a fill-in-the-blank interactive Web site that guides you through picking a topic, searching the Web, gathering good Internet sites, and turning Web resources into learning activities.

**Webquest Generator**
http://www.zunal.com/

**Zunal WebQuest Maker**
http://www.zunal.com/

This is a web-based software for creating WebQuests in a short time without writing any HTML codes. You may also find examples and plans on how to begin writing a WebQuest.

**Questgarden**
http://questgarden.com/

QuestGarden is an online authoring tool, community and hosting service that is designed to make it easier and quicker to create a high quality WebQuest. No knowledge of web editing or uploading is required. Prompts, guides and examples are provided for each step of the process. Images, worksheets and other documents can easily be attached or embedded in the WebQuest, and users have complete control over the appearance of the final lesson.

**TEMPLATES**

http://www.educationaltechnology.ca/resources/webquest/templates.php
http://webquest.sdsu.edu/LessonTemplate.html
http://www.babylonia-ti.ch/webquesten.htm

**LIST OF READING RESOURCES FOR NANOYOU DILEMMAS**

Below is a list of specific papers that relate to the content of each dilemma. For additional general references on ELSA and safety topics refer to the Bibliography List for Module 1 of the NANOYOU Teachers Training Kit (in the Educator Sector of the www.nanoyou.eu website).

This list is a supporting resource for the NANOYOU Role Play Game and the NANOYOU Virtual Dilemma provided by Luisa Filipponi.
Reports (free to download)


Research articles (paid subscription to journals required):


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**SILVER SOCKS**

**Reports (free to download)**

Silver Nanotechnologies and the Environment (PEN 15), Woodrow Wilson International Center for Scholars, Project on Emerging Nanotechnologies,

http://www.nanotechproject.org/publications/archive/silver/

“Advisory committee on hazardous substances report on nanosilver” 2009, Department for Environment Food and Rural Affairs (DEFRA), UK,


**Research articles (paid subscription to journals required):**


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**GPS JACKET**

**Reports (free to download)**
“The evolution of interactive textiles”, Specialty Fabrics review, 
http://specialtyfabricsreview.com/articles/0910_f2_interactive_textiles.html

http://www.tx.ncsu.edu/jtatm/volume2issue2/articles/meoli/meoli_full.pdf

Solutions for new trade-off model privacy-security (Current trends in nanotechnology, ICT, privacy and security), Interview with Dr Silvia Venier, ObservatoryNano July 2010, 

**Articles and book chapters (paid subscription required)**


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**NANO SUNCREAM**


“Preliminary opinion on safety of nanomaterials in cosmetic products”, Scientific Committee on Consumer Products (SCCP), 2007, European Commission, 
**Articles from scientific journals (paid subscription required)**


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**SUPER BRAIN**


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**Book Chapter**

REVOLUTION FOR THE LIGHT BULB

Reports (free to download)
“Quantum-dot displays could outshine their rivals”, New Scientist, December 2007,

http://www.nanotechproject.org/publications/archive/pen_10_-_where_does/

Journal articles and reviews (paid subscription required)


J. Lee et al., “Full color emission from II-VI semiconductor quantum dot-polymer composites”, Advanced Materials 2000, 12 (15) 1102-1105

THE “INTERNET OF THINGS”

Reports (free to download)


Journal articles and reviews (paid subscription required)

M. Lindwer et al., “Ambient intelligence visions and achievements: linking abstracts ideas to real-world concepts”, Proceedings of the Design, Automation and Test in Europe Conference and Exhibition (DATE’03),
http://doi.ieeecomputersociety.org/10.1109/DATE.2003.10173


NANSENSORS IN MEDICAL DIAGNOSTICS
Reports (free to download)


Observatory Nano Project Reports, Scientific and technological trends: medicine, healthcare and nanobio, http://www.observatorynano.eu/project/catalogue/2HM/, 2009. The following subtopics are covered: cosmetics; diagnostics; novel bionanostructures; implants; surgery and coatings; theurapeutics; regenerative medicine.


Journal articles and reviews (paid subscription required)


CANCER THERAPY WITH GOLD NANOPARTICLES
Observatory Nano Project Reports, Scientific and technological trends: medicine, healthcare and nanobio, http://www.observatorynano.eu/project/catalogue/2HM/, 2009. The following subtopics are covered: cosmetics; diagnostics; novel bionanostructures; implants; surgery and coatings; theurapeutics; regenerative medicine.

**Journal articles and reviews (paid subscription required)**


R. Duncan, Polymer conjugates as anticancer nanomedicines, Nature Reviews, 2006, 6, 688-701


Communicating with each other.

Expressing interest in the communication with each other.

However, instant messaging and text messages have

Common use of short forms in each message and

Deteriorating standards of English with more and more

Computers and mobile phones have made us all

We no longer see the need to talk to one

Another lesson to learn because of the

Communications of these devices.

Do you think worse at talking to one another? Not better, when

Computing is properly with one another.

Communicating properly with one another.

Source: G5716672B

http://www.microsistem.com/pdlc
Decision-making mindmap
On the one hand; On the other hand; Try to see the situation from my point of view; This is true but.; And another thing is.; I can see that, but... I take your point about that, but.; I do not think so for two/three reasons ...; On the whole ...; This is all true, but.; When we think about it carefully; Now, Eve, I must take issue with you there.; On the contrary; The important point I want to make is that.; Let's look at the problem from an other angle.; Remember to take this into account.; No other considerations?; These bare figures do not give the whole picture.; However, in the present context your arguments seem to be beside the point.; I take notice of what you say, but.; I would very much like to agree with what you said, but.; I must disagree with you here.; I am not quite sure of that.; I can't make up my mind where I stand on this ; What is your view on this.; My attitude towards.; To take a keen interest in.; Supporter of.; I strongly approve of.; I presume most people would share that particular viewpoint.; My own feeling is that; Are you under the impression that all smokers are fools?; I must admit that.; I'm afraid I'm tempted to agree, but.; I advocate.; To my mind.; I'm of the opinion that.; In my view.; I wholly disapprove of.; I'm a fierce opponent of.; I'm fully convinced that.; I suppose you might have a point there, but.; It's quite a liberal approach.; I don't think so.; I couldn't agree more.; That's not the way I see it.; There is lot in what you say but.; I'm of exactly the same opinion but.; I'd go along with you there but...; As I see it.; The way I see it.; I'm convinced that.; I'm of the view that.; To be perfectly honest what I reckon is that.;

**Opinions, Preferences:**

I think..., In my opinion..., I'd like to..., I'd rather..., I'd prefer..., The way I see it..., As far as I'm concerned..., If it were up to me..., I suppose..., I suspect that..., I'm pretty sure that..., It is fairly certain that..., I'm convinced that..., I honestly feel that, I strongly believe that..., Without a doubt,...,

**Disagreeing:**

I don't think that..., Don't you think it would be better..., I don't agree, I'd prefer..., Shouldn't we consider..., But what about..., I'm afraid I don't agree..., Frankly, I doubt if..., Let's face it, The truth of the matter is..., The problem with your point of view is that...

**Giving Reasons and offering explanations:** To start with, The reason why..., That's why..., For this reason..., That's the reason why..., Many people think..., Considering..., Allowing for the fact that..., When you consider that...
Mindmap showing how to do comparative analysis