Teaching Materials within Program Specific Courses
Promoting Integration with English at Upper Secondary School

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Abstract
The aim of this essay is to investigate two teaching materials in program specific subjects at the Child Recreation Program and at Technology Program to find out if English is possible to integrate across the curriculum or not. The purpose choosing two different programs is to investigate if there are any differences between the use of English at a so-called female program and a so-called male program. Statistics show that 70 per cent of the pupils at Child Recreation Program are female, and the corresponding number for male students at Technology Program is 85 per cent. (Statistiska centralbyrån, 2010) Two course books covering Health education and two covering Technology compared to the goals of English 5 revealed possibilities for integration of subjects, although the number of words was limited and not all the English 5 course goals were able to reach. The promoted theories are Content Based Instruction, CBI, and 21st century skills, which both are apparent in the curricula from 1994 and from 2011. The results show that a teacher of the future need to be well-informed about the program specific courses in order to be able to fulfil the goals in the course plan and aim at content-based learning, using the 21st century skills as tools on the way. Further on, teachers at upper secondary school agree that CBI is promoted in Gymnasieskola 2011 and that integration of subjects would benefit both teachers and students.

Keywords: Upper secondary school, Content-Based Instruction, 21st century skills, Lpf 94, Gy-11, technology, health education, Child recreation program, Technology program, integration of subjects
# List of Content

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction</td>
<td>2</td>
</tr>
<tr>
<td>Purpose</td>
<td>2</td>
</tr>
<tr>
<td>Background theories</td>
<td>2</td>
</tr>
<tr>
<td>The curricula influencing the integration of school subjects</td>
<td>2</td>
</tr>
<tr>
<td>Content-Based Instruction/ Content and Language Integrated Learning</td>
<td>3</td>
</tr>
<tr>
<td>Method</td>
<td>5</td>
</tr>
<tr>
<td>Procedure</td>
<td>5</td>
</tr>
<tr>
<td>Material</td>
<td>6</td>
</tr>
<tr>
<td>Analysis of course books</td>
<td>7</td>
</tr>
<tr>
<td>Course Book Analysis of Health Education</td>
<td>7</td>
</tr>
<tr>
<td>Course Book Analysis of Technology</td>
<td>10</td>
</tr>
<tr>
<td>Integration of school subjects- questionnaire results compared to the curriculum</td>
<td>13</td>
</tr>
<tr>
<td>Concluding remarks</td>
<td>14</td>
</tr>
<tr>
<td>References</td>
<td>16</td>
</tr>
<tr>
<td>Appendix 1</td>
<td>17</td>
</tr>
<tr>
<td>Appendix 2</td>
<td>20</td>
</tr>
<tr>
<td>Appendix 3</td>
<td>20</td>
</tr>
<tr>
<td>Appendix 4</td>
<td>20</td>
</tr>
<tr>
<td>Appendix 5</td>
<td>21</td>
</tr>
</tbody>
</table>
Introduction
As a teacher of English and foreign languages I find the number of lessons in English insufficient and I often find myself wondering if integration of school subjects could help both the students and myself to reach more goals at a higher level, in more than one subject. Therefore I will study and examine two course books from Health education and two from Technology, to illuminate the possibilities of collaboration between English and program specific subjects in one predominantly female program, Child Recreation Program, and in one predominantly male program, Technology program. Statistics show that 70 per cent of the students are female at Child recreation program and the equivalent number for male at Technology program is 85 per cent. (Statistiska centralbyrån, 2010)

Purpose
The aim of this essay is to investigate whether students attending the Child Recreation Program come in contact with any English in their program specific subject Health education and if the case is the same for Technology students in their program specific subject Technology, man and society. I will study two course books for each course and compare the amount of English used. Further on, the words found will be categorized, interpreted and compared with the goals for English, the specific course and with the program.

To make the study valuable for the future I will create a questionnaire for teachers of program specific courses in order to investigate their attitudes towards integration of school subjects, specifically English and program specific courses, and why or why not this integration takes place.

Background theories
The curricula influencing the integration of school subjects
There are at present two curricula guiding the upper secondary school, from different years; 1994 and 2011, called Curriculum for the Non-Compulsory School System, Lpf 94, and Upper secondary school 2011, Gy-11. The old curriculum Lpf94 guides the students attending the second and the third year of their education. In this curriculum it is palpable that English is a part of the goals for the Child Recreation program proclaimed that a student: “can communicate in Swedish and English aiming at the need of the profession, life in society and further education.” (Lpf94) Also within the Technology program the language focus is clear where the goal is presented that the student: “can use English in an appropriate way in speaking and writing within the technical area and in other contexts.” (Lpf94) On the other hand these language specific goals for the programs have changed and are no longer stated in the new curriculum Gy-11 for the Child recreation program, where no reference to English is
expressed, but still existing for the Technology program: “The education should give the students knowledge about and skills in English within a technical context, so as to develop their communicative skill and thereby take part in technology and technology development.” (Gymnasieskola 2011:269)

The new curriculum for upper secondary school Gymnasieskola 2011, has the future as goal when it comes to language learning and teaching, with 21st century skills as a theory behind: “Life and Career Skills, Learning and Innovation Skills (4Cs Critical thinking, Communication, Collaboration, Creativity), Information, Media, and Technology Skills.” \(^1\) These skills are visible in the syllabi of different subjects and also in the grading criteria for each course where words such as “progression”, “risk assessment” and “project work” (Gymnasieskola 2011:55) are some of the key words guiding the teacher and head master. Although no explicit method is prescribed, reading the guiding documents, the curriculum and the syllabi, there are no doubts that the theories behind the documents approve of cross-curricular teaching or integration of school subject, which is the term that will be used further on in this essay. In order to reach all the stated goals within the prescribed time limit there has to be collaboration between subjects and courses, which in this essay is interpreted as a need for content-based instruction method. Following this train of thoughts leads us to call in question if the teachers of upper secondary school have the expected skills and competence to fulfil the goals of the curriculum without any further education training. Thus, working with learning and learners demands constant learning and openness for the future.

**Content-Based Instruction/ Content and Language Integrated Learning**

Teaching and learning are two important areas of research that have numerous advocates who state different opinions and methods towards success. One successful theory is presented by Sonia Casal when she explains how Content and Language Integrated Learning (CLIL) works in her essay “Cooperative Learning in CLIL Contexts: Ways to improve Students’ Competences in the foreign Language Classroom.” \(^2\) There she argues for integration but also systematic planning. “The most important point is, as Cummins (1994) remarks, that all teachers are teachers of language and content.” Casal presents the CLIL as a method where integration of second language and subjects like history, geography and social studies has helped and improved the students’ language and content skills. It “provides a motivational and cognitive basis for language learning.” (Casal 2008:2) This method relies on the teachers


and does not promote autonomous learners which is a disadvantage. Another disadvantage presented by Casal is the lack of activities promoting speaking and writing skills, and that is why she involves cooperative learning in order to reach a higher level of proficiency in speaking and writing as well as the content, which is reached by reading and listening. This suggests that an English teacher must know all the program specific courses to be able to cooperate, and not only exhibit an average level of being well-informed, but moreover with assertiveness knows the goals for every single course their students attend and the subjects themselves.

In addition to Sonia Casal’s CLIL there are several other scholars presenting and advocating the same method but instead call it the Content-Based Instruction (CBI) method. In Diane Larsen-Freeman’s Techniques and Principles in Language Teaching she presents fourteen different methods among others the CBI, where content is seen as a mean of language learning, and not focus explicitly on the language structure, but through the content gain access to language skills or as Larsen quote from Howatt: “In this approach rather than ‘learn to use English’ students ‘use English to learn it’. “ (Larsen-Freeman 2000:137) The CBI, as CLIL, “integrates the learning of language with the learning of some other content” (ibid 137 but focuses on the instruction and the actual use of the language in speaking, reading, writing and listening. Therefore “Teaching should build on students’ previous experience.” (ibid 137) and argues that “Vocabulary is easier to acquire when there are contextual clues to help convey meaning.” (ibid 140) In this essay both methods will be regarded as equal.

Further on Jack C. Richards and Theodore S. Rodgers refer to Brinton, Snow, and Wesche’s work on CBI in Approaches and Methods in Language Teaching, where the theory of language behind this method is that “language is text- and discourse-based, language use draws on integrated skills, language is purposeful.” (Richards & Rodgers 2001:208) They also argue for a future for this method within educational areas, which is confirmed by Mr Ebke, Director of the National Department of Didactics and Teacher Training in Tübingen when he agrees that CLIL is a successful way of language learning.

The EU has set up a working group in Brussels with representatives from all member states which is looking into a European profile for language teacher education. We have, for example, reached a consensus on the following specification: “Prospective teachers will learn the methods and strategies necessary to teach a non-language subject in a foreign language.”

3http://www.goethe.de/ges/spa/dos/ifs/ceu/en2747777.htm
In language teacher education there are strategies for integration but there are other strategies within education of Health education, where “logical positivism and logical empiricism” (Glanz 2008:29) are theories behind how to teach the subject. This involves group discussions and brainstorming as two ways of working presented in the course books examined. Teaching technology involves course ICT-skills (Information and Communications Technology) and a professor presenting this connection is D. Michele Jacobsen from Canada in her work Adoption Patterns of Faculty Who Integrate Computer Technology for Teaching and Learning in Higher Education. Although this research was presented 1998 it still reveals methods that are used and developed. According to Jacobsen faculty ranked different methods for teaching technology as follows with the most important first: “[1] hands-on experimenting and trouble shooting, [2] mixture of manuals and hands-on, [3] hardcopy materials, books, etc., [4] on-line manuals, [5] workshops and presentations, and at last, [6] structured courses and guidance.” (Jacobsen 1998:6)

These theories and strategies will be the background when comparing the goals for each course to the goals for the English 5, in order to utilize the mandatory goals and reduce insufficient tasks limited to one course only.

**Method**

**Procedure**

This essay will examine four course books of program specific courses, used on the Child recreation program and on the Technology program, and their endeavour of covering the most important areas of interest and future requirements, despite the fact that the subject English 5 in this context at the Swedish upper secondary school, is expected to be giving multifaceted views and perspectives for all the programs offered by the school saying that “Subject areas related to students’ education” (Syllabus English 5), should be studied, which, with the time limit, is difficult with students from different programs having different syllabi guiding them. Therefore, the connection and integration between English and Health education, and English and Technology will be closely studied and presented under each course book analysis.

For each course book all English words that are printed will be identified, categorized and then compared to the syllabus for English 5 and to the Health education and Technology courses. This comparison will follow a certain procedure in order to present the findings as accessible as possible. First the words have to be linguistically identified and categorized according to parts of speech and/or as abbreviations or acronyms. The site [www.thefreedictionary.com](http://www.thefreedictionary.com) will be used as reference, but in addition the Swedish dictionary [www.ord.se](http://www.ord.se) will be used to double check when there are ambiguous definitions. In order to
define if a word is English or already an incorporated word within the Swedish vocabulary the on-line SAOL dictionary will be consulted. Secondly, the words will be evaluated towards the course goals and their connection to English level 5, in order to find out if they help to reach any goals in English. It is also relevant to study why these English words are not written in Swedish and the reason for this observation. Where there are references to Swedish documents the translations into English will be made by me, except for the syllabus English 5 which already is accessible in English. Thirdly, and hopefully, there are inferences to argue for integration of school subjects, applicable the CBI and 21st century skills.

In addition there will be an on-line questionnaire made in google-docs asking 19 teachers, 11 Technology program and 8 Child recreation program, from two different schools about their attitudes towards integration of school subjects. (Appendix 1) The first three questions are variables that might influence the answers later on or not, namely program working at, sex, years working and what courses they teach. Of the remaining nine questions seven are closed and two are open-ended. The reason for deciding on closed questions was that they are quicker to answer and teachers are extremely occupied. Consequently, the questionnaire would merely take maximum five minutes to answer.

Material
The reasons for choosing Health education are above all that the course books were available and that the subject seemed to give reasons for integration. Sub reasons are that I teach students of that program and wished to learn more about the new curriculum and program specific courses. The two course books for Health education that will be examined are both called Hälsopedagogik. The first is written by Liselott Ohlsson and is intended for Lpf94 and it covers a 50 credit course divided into eight different chapters presenting intended information connected to the course criteria, but not in the same order as under “Goals that the students have to have achieved after completed course” (Syllabus Hälsopedagogik Lpf94). The second course book is written by Tove Phillips and is intended for Gy-11 and covers a 100 credit course divided into ten chapters consistently covering ten of the eleven “Core content” (Syllabus Hälsopedagogik Gy-11) for this course, where content number ten apparently enough does not have its own chapter as it refers to a general skill: “Critical revision of information from different sources” (Syllabus Hälsopedagogik Gy-11).

The reasons for choosing Technology are the same as for Health education: available course books and integrating possibilities. The two course books for Technology that will be examined are Teknik människa samhälle written by Stefan Sjöberg in 2000 and Teknik 1 written by Johnny Frid in 2011. Sjöberg’s book is intended for a 50 credit course in
Lpf94 and is divided into six chapters covering the five goals of the course. Frid’s book covers a 150 credit course in Gy-11 and is divided into 17 chapters where the content of the course is not easily found. This course book does not follow the core content from the syllabus, and the part about ethical values and gender structure is ambiguous and limited.

Analysis of course books
In this section the results of the four course books and the questionnaire will be presented together with a comparison and an analysis of the findings, adding possibilities of integration of school subjects.

Course Book Analysis of Health Education
The first analyzed course book was Hälspedagogik by Liselott Ohlsson, and this book was written for Lpf94. In this book seven acronyms and four words were identified as English. The acronyms found were: WHO, BMI, ADL, UNICEF, UNDP, UNAIDS, UNHCR.

(Appendix 2) These acronyms are all commonly used as the same acronyms in Swedish even if we actually speak them in Swedish, for example, WHO which we pronounce every letter of W-H-O, or say världshälsorganisationen. We do not say World Health Organization. This could indicate that even BMI would be used in the same way, but this is not the case as we only use the acronym BMI, which we refer to as Body Mass Index, with no commonly used Swedish reference. ADL stands for Activity of Daily Living and we say ADL-träning, without any aim at translating the acronym, although particularly this word was explained in the course book. UNICEF is used as a word in Swedish and we do not try to express the whole name of the organization which is United Nations Children’s fund, originally named United Nations International Children Emergency Fund.4 The three remaining acronyms are all connected to the United Nations: UNDP (United Nation Development Program) UNAIDS (Joint United Nations Programme on HIV/AIDS) and UNHCR (United Nations High Commissioner for Refugees). There are only 4 words: coping, do-in, open space and post-it. (Appendix 2) Open space is a phrase consisting of an adjective and a noun which easily could have been translated to Swedish but is not because it refers to a specific method. The other three are verbs but also refer to nouns in some contexts, for example coping could be seen as both a noun and a verb, changed into the –ing form. Do-in is a compound of a verb and a preposition referring to a method lacking a Swedish translation in this context. The compound post-it consists of a verb and a pronoun, but the first part is also a noun, but not in this case. Here we have a use of the phrase also in Swedish together with a noun: post-it-lappar. (Appendix 2)

4 The whole name is found at www.thefreedictionary.com
Strangely enough this was not a part of SAOL-on-line although we use it on every day basis, which might refer back to the circumstance that *post-it* also is a trade mark. We do have a Swedish phrase to use (kom-ihåg lappar) but prefer the English.

With only four English words in a whole course book there is no integration of English and Health education visible, but if this content could be used in English in order to connect to goals for both courses there would be teaching benefits for both courses. Among others, the goal “The course shall furthermore develop an approach where health is observed from a cultural and international perspective of society.” (Hälsopedagogik Lpf94) is possible to connect to English. The international perspective and the possibility for the students to “instruct, narrate, summarise, explain, comment, assess, give reasons for their opinions, discuss and argue.” (Syllabus Engelska 5, Gy-11) could be integrated when dealing with the United Nations and their work, and naturally connect to the English speaking countries of the world. One of the tasks presented in the course book (Ohlsson 2008:226) asks the students to do research about one of the earlier named organizations, for example WHO, and to find out what goal one of their projects has, what target it has, what methods are being used and how they value the probability to reach the results aimed at, and this task could be done in English as many sources available on the Internet are in English. It is not before the highest grading level-passed with great distinction- that the student have to show his/her skills within this goal: “The student compares and analyzes the meaning of cultural and international elements for health and quality of life.” (Syllabus Hälsopedagogik, Lpf94) As this goal demands higher proficiency it might be difficult to motivate the students to integrate Health education and English in this aspect, or the opposite, it could promote and motivate higher proficiency in both subjects, which would be a victory on the way to learning. As claimed earlier, integration like this acquires competent and skilled teachers who devote their time, structure the tasks and work, countervail the time limit and maintain a high quality.

The second course book *Hälsopedagogik* by Tove Phillips was composed to cover the goals for Health education in Gy-11, where there is no constraint to cover any of the goals for the Child recreation program in English, which is logical as this course book only presents two English words: *coping* and *leisure* (Appendix 3) and five acronyms: *WHO*, *LSD*, *PCP*, *GHB*, and *CRP*. *Coping* is used as a noun and refers to the same as in Ohlsson’s course book, how to handle misfortune. It is clearly explained and there is no doubt what is meant. The same is valid for *leisure* (Appendix 3) which is a noun and explicitly explained. None of these words help to reach any goals in English, but could be reasons for students to find interest in English culture differences and attitudes. From the acronyms detected only one is the same as
in Ohlsson’s book, *WHO*, which in six of nine cases are in brackets after the Swedish *världshälsoorganisationen* (Appendix 3) in this book, and *UN* is presented with the Swedish acronym *FN* (Phillips 2011:59). There are three organizations named in English: “Amnesty International, Greenpeace and Human Right Watch” (Appendix 3) and these names have no Swedish translation so they are internationally written.

From the point of view of the English course there are several possible integrated topics and methods, for example differences in cultural experiences and also in presenting facts about worldwide organizations such as WHO and Amnesty International, leading to ethical discussions on international topics motivating both learning and language skills. A task presented in *Hälsopedagogik* asks the student “individually, in pairs or teams to find out how the public health in EU is organized” (Phillips 2011:189) and what laws that are valid for EU in different areas such as drugs, provisions, pharmacy and animal regulations, not only in Sweden or another single country. This gives a possibility to integrate English, if this task was to be performed in English. The core content for Health education possible to integrate is the first mentioned: “People’s health, living conditions related to health and different effects of health from an environmental point of view, historical perspective and international perspective along with out of social and cultural aspects.” (Syllabus *Hälsopedagogik Gy-11*)

Connecting to the core content for the English 5 course the student could involve all of the following:

- Subject areas related to students’ education, and societal and working life; current issues; events and processes; thoughts, opinions, ideas, experiences and feelings; relationships and ethical issues.
- Living conditions, attitudes, values and traditions as well as social, political and cultural conditions in different contexts and parts of the world where English is used.
- The spread of the English and its position in the world.
- Texts of different kinds and for different purposes, such as manuals, popular science texts and reports.
- Different ways of searching for, selecting and evaluating texts and spoken language. (Syllabus *English 5 Gy-11*)

If one task could mean the fulfilment of a number of these goals the quality of the work could be higher quality as the student would have more time and assistance from the teacher. Public health and EU are both issues of daily living which could motivate the students to find out more and to perform a better result. As this course is program specific it does not require English, but the sources on the Internet will, in many cases, be in English, which would motivate the student to read and learn English without actually noticing, exactly as the CBI (Content Based Instruction) promotes integration of subjects. Using the Internet definitely
requires ICT-skills and critical thinking which connects to the last goal. It is strange that the program goals for Child recreation program lack references to English as there are favourable connections between the two courses Health education and English. For students with weak motivation there could be a limited amount of pages to read in English, but still possibilities to reach the goals for English 5.

Both course books admit integrating possibilities, but as with all education and learning there has to be cooperation between teachers and systematic planning to reach the goals, as both Casal and Larsen-Freeman argue.

Course Book Analysis of Technology
The second program specific course being analyzed is Technology with two course books representing both curricula Lpf94 and Gy-11. The first book is called *Teknik människa samhälle* and was written by Stefan Sjöberg in 2000 aiming at the goals presented in Lpf94. When studying the words found in *Teknik människa samhälle* it is clear that there is a link between English and Technology. There were 50 English words found and 45 of them are nouns presenting history of technology, one acronym, three titles and an adjective. The most frequently used word was *technology* (Appendix 4) which was used twelve times, as a headline in a small box with three to five other English words beneath, all translated into Swedish. This noun is in compliance with the name of the course and is a key word for technology students. The technical inventions presented in English, for example *spark-plug*, *three-phase-current* and *broadband* (Appendix 4) are all connected to the historical perspective. Only one acronym, *GPS* (Appendix 4), was found and is naturally a technical device and not an organization as in Health education with references to WHO and UN. Three of the words were titles or names. The only adjective is *unplugged* (Appendix 4) which is written twice in the course book.

From the course goals for “Teknik människa samhälle” there are two possible to integrate with English:

have knowledge about and skill to discuss ethical problems, which can occur both in a local, regional and global perspective due to technical changes

have knowledge about important events and course of events in the history of technology and their significance for people’s lives and the development of the society. (Syllabus Teknik människa samhälle, Lpf94)

When integrating Technology and English it seems that thoughts, emotions and relations are more difficult to integrate and little or no reference to the first goal connecting to ethical
problems is presented in Technology. In this context integration with environmental issues could be a possibility, but as many of the technical inventions mentioned in the course book were invented in English speaking countries there are connecting possibilities to the core content for the English 5 course that the student could involve partly:

- Subject areas related to students’ education, and societal and working life; current issues; events and processes; thoughts, opinions, ideas, experiences and feelings; relationships and ethical issues.
- Texts of different kinds and for different purposes, such as manuals, popular science texts and reports.
- Different ways of searching for, selecting and evaluating texts and spoken language. (Syllabus English 5 Gy-11)

The most favourable connection is the use of ICT-skills and critical thinking. Although this course was designed for Lpf94 it is obvious that the 21st century skills would be appropriate to use here. One possible interpretation is that technology is in the vanguard of what will be asked for in the future and is a part of everyday living with, for example mobile phones and laptops.

The second course book *Teknik 1* written by Johnny Frid in 2011 corresponds to the central content in Gy-11. The number of English words and acronyms was much higher than in previous books and follows on table 1 referring to the actual number and no percentage:

Table 1. *Words in Teknik 1* by Johnny Fridh

<table>
<thead>
<tr>
<th>Category</th>
<th>Words/acronyms</th>
<th>Acronyms</th>
<th>Nouns</th>
<th>Adjective</th>
<th>Various</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>160</td>
<td></td>
<td>60</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>Names</td>
<td></td>
<td>20</td>
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<tr>
<td>Titles</td>
<td></td>
<td>0</td>
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</tbody>
</table>
Totally there were 138 English words and acronyms in the course book, and they are separated into four groups which you see in table 1: acronyms, nouns, adjectives and various, where various consists of verbs, adverbs, determiner, prepositions and prefix. (Appendix 5) All acronyms found were also explained by the words they abbreviated, preferably in brackets, and they were nouns and adjectives in most cases, but a few prepositions were part of the acronyms. One quotation from a press release (Fridh 2011:179) is not part of this study as it is an extract from a report consisting of 58 words that would have rendered another method and investigation. This part was not analyzed. The nouns are divided into nouns, names and titles, 44 all together. There were seven adjectives and nine words in the group various. (Appendix 5) The words and acronyms refer to technical devises and companies, and many of them are used on every day basis when working with a computer, for example Windows, Exel and Facebook, while others are exclusively connected to technology: RAM (Random Access Memory), International Thermonuclear Experimental Reactor (ITER) and SLS (Selective Laser Sintering) (Appendix 5).

Out of eleven pieces of core content only two are possible to connect to English:

- Project work-, communication-, presentation- and model technology, for example digital media and software, manuals and instructions, oral and written reports along with digital and manual techniques to create models.
- Basic philosophy of technology: ethical values and gender structures, along with how they have influenced and influence technology, its application and accessibility. How technology and the features of technology are gender marked. (Syllabus Teknik 1 Gy-11)

This course book lacks the structure from the course plan which makes it more like a reference book, as it also lacks study questions and assignments which the other book had. On the other hand it teaches models of working and structures to follow and learn to use, for example when a project work is described the different steps and procedures are shown with both words and pictures. (Fridh 2011:16-28) As there are no tasks or questions no integration is immediately visible, but the content is of course relevant when it comes to, for example how to present an instruction or argue for or against a technical devise. At the end of the book there are two pages 315f about technology and ethics. As the amount of English is rather high, compared to the other course books, there certainly are reasons for integration on CBI level. This means that either the English teacher has to know Technology to teach it or the Technology teacher has to know English to teach his/her subject in English. Cooperation is also possible, but the content must be familiar to both teachers.
Technology course books seem to follow another methodology than English and Health education, which makes it more difficult to integrate Technology and English when it comes to the central content of both subjects. This inference is strange as there are many more English words in the Technology course books that indicate reasons for integration, which is not the case.

Integration of school subjects- questionnaire results compared to the curriculum
A questionnaire created in google-docs (Appendix 1) was sent to 19 teachers’ e-mail addresses at work after phone calls to staff rooms at two different upper secondary schools. Only ten completed the on-line questionnaire, five male teachers and five female. Those representing the Child recreation program were three female and they had completed their education 1987-1989. Two of them taught Health education, but also other courses, for example Working methods and Recreation knowledge. Of those representing Technology program five were male and two female. The diversity in year of degree was wider, from 1978 to 2011. Computer knowledge was the most frequently taught course, followed by Technology man society, Technology development and leader of an enterprise along with Physics and Maths B and C. Only one teacher taught Technology 1. Totally five teachers took part in integration of school subjects, preferable with Swedish, and at the Technology program, only one at the Child recreation program. As the number of answers is low there is no possibility to draw any conclusions, but merely refer to what these individuals have answered.

According to the answers the main reason for integration is a student perspective that they will reach more goals, and also that teachers like team work but only six of the teachers chose that alternative. The curriculum as a reason is also chosen but to a lesser extent (five) and as the last reason. When it comes to spoken English it seems like there is little or no communication taking place within other subjects. That might be due to the teachers’ biased knowledge of their own subjects. One explanation why students do not speak English during other lessons than English is that they do not have English and that they connect spoken English to lessons in English and no other subjects. Question number eight asked if they would consider taking part in integration of subjects with English if the English teacher offered to prepare a course, or part of a course in English and seven teachers answered affirmative and would join the integration. Nine teachers predicted that the integration would affect the students’ ability to reach their goals positively. Six teachers use material in English
in program specific courses, preferably in the Technology program. Reasons for not integrating are schedule and lack of time. Even fear was mentioned as a possible reason.

The last question was answered positively by six teachers stating that the curriculum promotes integration of subjects, which connects to the Gy-11 as exactly a bridge to CBI learning and use of 21st century skills, preferable “Information, Media, and Technology Skills.” 5 These answers indicate that team work only takes place when the teachers know each other and devote time to integration and collaboration. Still many teachers focus on their own courses and do not know anything about other course goals or program goals. Reading the curriculum teachers have to assess “knowledge of facts, understanding, skills and familiarity with” (Gymnasieskola 2011:52) and these assessment criteria are the same for every course at upper secondary school.

**Concluding remarks**

In this essay different theories and materials connected to the Swedish upper secondary school have been examined and evaluated. The guiding documents, Lpf 94 and Gy-11, state what a student is aiming at and what the teachers and other staff working at a school should aim at. The program specific courses that have been closely studied are Health education at Child recreation program and Technology at Technology program. Both program specific goals and course goals have been compared to the goals of English 5 and reveal reasons for integration of subjects referring to CBI and 21st century skills. The goals possible to connect Health education and English are 1) “subject areas related to students’ education” 2) “living conditions [...] in English speaking countries” 3) “the position of the English language” 4) “Texts of different kinds” and 5) “different ways of searching for, selecting and evaluating texts and spoken language.” (Syllabus English 5, Gy-11) In contrast, there are no program specific goals connected to English in Gy-11, but only in Lpf94, which is strange as there are many possibilities for integration.

The goals possible to connect Technology and English 5 are derived from technical devises and history and the number of goals is not possible to equate to Health education although the number of English words was much higher in the technology course books. The first and the last two pieces of core content in English 5 are the same for Technology and Health education. This conclusion hypothesizes that, although Health education does not require English it has more criteria applicable on English than

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Technology, which is a subject that should rely on English in the program goals, but lacks the applicable criteria in the course documents.

Content and methods merge in the curriculum and give reasons to utilize CBI when studying a language. Therefore all language teachers need to undergo constant training in program specific courses and their goals, in order to emulate the teachers of program specific course. To equate the circumstance the teachers of program specific courses could undergo English studies as the international perspective is highly valued in both programs studied in this essay. Hence, an advice to teacher education is to add content based course to English and argue the ascendancy of CBI and 21\textsuperscript{st} century skills, as already was presented by Mr Ebke and S. Casal. Sadly enough, as a language teacher you can feel degrees of inferiority when studying a technology course as the English exhibited in that course is prompted by the content, which might be unknown and difficult, which once again confirms the need of constant education and collaboration between teachers and schools. In this essay there has been no focus on assessment criteria which is a reality to every teacher having to grade every student in every course. This part would need another study and more time.

The questionnaire to the teachers about integration of school subjects did not reveal any possible inferences because of the few answers, but indicated a divergence between Child recreation program and Technology program in attitude towards integration, where the technology teachers already worked with CBI but not the teachers of the Child recreation program, outside their own courses. Six teachers use material in English in program specific courses, preferably at Technology program. Reasons for not integrating are schedule and lack of time. Even fear was mentioned as a possible reason. This part of the research was merely successful in the aspect of ICT-skills for me, but did not countervail work and results.

However, there have been difficulties during the research, among others to identify relevant and valid background information, encourage teachers to answer the questionnaire and also to draw conclusions from the poor number of English words in Health education course books. To identify the words as part of speech or as acronyms was not difficult with www.thefreedictionary.com as reference, but in some cases another source was consulted, www.ord.se. As a physical book feels more reliable the Longman Dictionary of Contemporary English would have been a better reference, but realized this too late. Another drawback was that there was a part of Teknik 1 which was not investigated because lack of time. This part could have rendered its own study and comparison against the course goals.

During this study course books in English has not been questioned and valued towards the goals. There are many different texts and tasks in English course books, but none
of them are specifically connected to program specific courses, but instead offering a variety of texts and tasks that are required in the syllabus. Through this study I have realized that a course book in English is not sufficient. You have to be well informed about the program specific courses and their syllabi, connect and collaborate with other teachers and above all show an interest in learning. Therefore, new questions rise, for example, what can be done to heighten the level of English among Child recreation students? What ways of integrating Technology and English might there be if no further education is proposed upon the teachers? What kind of teaching material is used except the course books? Are the ICT-skills promoted and used among upper secondary school teachers, in what subjects and how? These questions show that didactics and teaching methods are of my interest, and hopefully some of them will be realized next year at work.

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Framework for 21st Century Learning

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www.google.se/books
http://www.google.se/books?hl=sv&lr=&id=WsHxyj710UgC&oi=fnd&pg=PR5&dq=health+education+and+methods&ots=EVP_Q7PmXH&sig=8JFOc7vSisBAPhtZbRvgxpUHQuQ&redir_esc=y#v=onepage&q=health%20education%20and%20methods&f=false 2012-04-10
kan använda engelska på ett funktionellt sätt i tal och skrift inom det tekniska området och i andra sammanhang,

**Gy11**
Utbildningen ska ge eleverna kunskaper om och färdigheter i engelska inom tekniskt området, så att de kan utveckla sin communicativa förmåga och därmed ta del av teknik och teknikutveckling.

1. **Which program do you teach at?**
   BF Teknik

2. **Sex:**
   Female Male

3. **Which year did you complete your teacher training and education?**

4. **What programme specific subjects do you teach/have taught since 2008 and forward? Choose one or many!**

**BF(Lpf94)** (karaktärsämnen, 700p)
- Arbetsmiljö och säkerhet
- Arbetssätt och lärande
- Barn-, kultur- och fritidsverksamhet
- Datorkunskap
- Fritidskunskap
- Hälsopedagogik
- Kommunikation
- Pedagogiskt ledarskap
- Utveckling, livsvillkor och socialisation

**Gy11** (programgemensamma ämnen, 700p)
- Hälsopedagogik
- Naturkunskap 1a2
- Kommunikation
- Lärande och utveckling
- Människors miljöer
- Pedagogiskt ledarskap
- Samhällskunskap 1a2
- Svenska 2/ Svenska som andra språk

**Teknikprogrammet (Lpf94)** (karaktärsämnen, 650p)
- Datorkunskap
- Engelska B
- Fysik A
- Kemi A
- Matematik B
- Matematik C
- Teknik, människa, samhälle
- Teknikutveckling och företagande

**Gy11** (programgemensamma ämnen, 400p)
- Fysik 1
- Kemi 1
- Teknik 1
5. Do you participate in any integration of school subjects during this school year 2011-2012?
   Yes  No
   If yes:
   a. With what subject/s?

6. What could be the reasons for integration of school subjects? Choose one or many answers!
   a. Students reach more goals from the curriculum
   b. Teachers like team work
   c. The curriculum Gy 11 advocates integration of school subjects
   d. Own answer:

7. Do the students use spoken English without being told to do so in any of the subjects you teach?
   Yes  No
   a. What reasons lie behind, do you think?

8. If the English teacher offered to study one programme specific course during English lessons. How would that affect your teaching?
   Positive  not at all  negative

9. How would it affect the ability for the students to reach the goals?
   Positive  not at all  negative

10. Would you consider teaching your courses/parts of your courses in English, with support from the English teacher?
    Yes  No

11. Do you use any material in other languages than Swedish, when teaching program specific courses?
    Yes  No
    a. What languages?

12. What is the main reason for not doing integration of school subjects?

13. Do you think Gy11 makes it easier to integrate school subjects?
    Yes  No
Appendix 2
English words in Hälsopedagogik by Liselotte Ohlson 2008, Liber, Stockholm
s.20,83,177,218,219,220, 221,222,226 WHO (acronym, abbreviation)
s.23,59 BMI Body Mass Index (acronym, abbreviation)
s.30 HIV- SAOL
s.40 deadline- SAOL
s.60 chattar- SAOL
s.69 coping (verb/noun)
s.103 do-in (verb hyphen preposition)
s.108 feedback-SAOL
s.126,138 open space (adjective noun)
s.128 brainstoming- SAOL
s.131 coachning- SAOL
s.133,134,138,141 ADL Activity of Daily Living (acronym, abbreviation)
s.136 post-it (noun, trade mark)
s.157 snowboard- SAOL
s.179 skinhead-SAOL
s.218,221,222,226 UNICEF (acronym, abbreviation)
s.221 UNDP (acronym, abbreviation)
s.221 UNAIDS (acronym, abbreviation)
s.222 UNHCR (acronym, abbreviation)
http://www.svenskaakademien.se/svenska_spraket/svenska_akademiens_ordlista/saol_pa_natet/ordlista
www.thefreedictionary.com

Appendix 3
English words in Hälsopedagogik by Tove Phillips (224 pages)
s.8,24,38,59,67,68,185,187, 188 WHO (acronym, abbreviation)
s.46 healing SAOL
s.54 screening SAOL
s.60 Amnesty International, Green peace, Human Rights Watch (1. Noun=name of organization
2. noun=name of organization 3. noun=name of organization)
s.82 coping, cope= klara, hantera (noun, verb)
s.101 leisure (noun)
s.147 (LSD, PCP, GHB) acronyms in Swedish although they are not in SAOL
s.200 CRP-protein (used in medical service) (acronym, noun)
8; 2 nouns, the remaining are acronyms and names
http://www.svenskaakademien.se/svenska_spraket/svenska_akademiens_ordlista/saol_pa_natet/ordlista
www.thefreedictionary.com

Appendix 4
s.11, 13 unplugged (adj. adverb)
s.16,28,30,37,46,51,55,61,66,69,79,92 technology 12 words (noun)
s.16 vocational training (adj.+ noun)
Appendix 5
Words in Teknik 1 by Johnny Frid, (2011) Gleerup, Malmö (321 pages)

s.16  on-the-job-training  (preposition+definite article+noun+noun)
s.19  Technics and Civilisation – title
s.28  spinning wheel  (noun+noun)
s.28  loom  (noun or verb)
s.28  sewing machine  (noun+noun)
s.30  refrigerator, fridge  (noun, noun)
s.30  vacuum cleaner  (adj+noun)
s.37  exhaust (gas)  (noun)
s.37  catalytic exhaust purifier  (adj+noun+noun)
s.37  sparking plug (spark plug)  (noun+noun)
s.37  disc brake  (noun+noun)
s.46  casting  (noun)
s.46  potter's wheel  (noun+noun)
s.51  steering  (noun)
s.51  operation control  (noun+noun)
s.51  feedback SAOL
s.55  lever  (noun)
s.55  crow bar  (noun)
s.55  crank  (noun)
s.55  connecting rod  (noun)
s.55  valve  (noun)
s.55  non-return valve  (adj+noun)
s.55  gear  (noun)
s.55  gearwheel  (noun)
s.55  cogwheel  (noun)
s.61  nuclear reactor  (adj+noun)
s.61  nuclear power station  (adj+noun+noun)
s.61  irrigation  (noun)
s.61  water wheel  (noun+noun)
s.61  brewery  (noun)
s.66  piston  (noun)
s.66  spark-plug  (verb/noun+noun)
s.66  gear-box  (noun+noun)
s.66  bulb  (noun)
s.69  infrastructure  (noun)
s.69  component  (noun)
s.69  subsystem  (noun)
s.79  three-phase current  (the cardinal number+noun+noun)
s.79  transformer  (noun)
s.79  band width  (noun+noun)
s.79  broadband  (noun)
s.92  harvester, harvesting machine  (noun, noun+noun)
s.92  thrashing  (noun)
s.92  rotation of crops, rotation farming  (noun+preposition+noun, noun+noun)
s.92  artificial manure, fertilizer  (adj+noun. noun)
s.98  GPS (global positioning system)  (acronym)
s.100  spinning Jenny SAOL på spinning
s.100  engine  (noun)
s.141  "The Wealth of Nations"  (title)
s.141  "The Flyer"  (name of a plane)  54 words
SLS (Selective Laser Sintering) (acronym)

SAOL

CAE- computer aided engineering (acronym)

CAM= Computer aided manufacturing (acronym)

CNC= computer numerical control (acronym)

Climate orbiter (noun noun)

italic, bold, bold italic (adjective, adjective, adjective)

dpi dots per inch (abbreviation)

PDF= portable document file (acronym, abbreviation)

GIF (Graphics Interchange Format) (acronym)

JPEG (Joint Photographic Expert Group) (acronym)

Quicktime (name of a program)

iPad (acronym, trade mark)

“Blood, Sweat and Tears”- (title)

Equation Editor (name of a program)

Exel (name of a program)

Illustrator (name of a program)

PowerPoint (name of a program)

layout SAOL

InDesign, QuarkXpress (name of programs)

prepress (noun)

Photoshop (name of a program)

FreeHand (name of a program)

Facebook (name of a social networking site)

YouTube (name of a web site)

Twitter (name of an instant message system)

Blog ("blogg" in Swedish) (noun, short for web log, but also the verb for writing on a blog)

the Lomographic Society (name of an organization)

Smart Board (name of an electric device, trade mark)

CAPP (Computer Aided Process Planning) (acronym)

Scientific Management (name of a theory)

Concurrent Engineering (samtidigt ingenjörsarbete) (adjective, noun)

TQM (Total Quality Management) (acronym)

chuck SAOL

Limited (name)

(oxygen) SAOL

(RoHS= Restriction of hazardous Substances in Electronic and Electrical Equipment) (acronym)

MIG (Metal Inert Gas) (acronym)

MAG (Metal Active Gas) (acronym)

Hydroforming Design Light (name of a company)

Sandvik Materials Technology (name of a company)

logotype SAOL

Take away (verb, if written as one word adjective or noun)

AIDAS Attention- Interest- Desire- Action- Satisfaction (acronym)

DABA definierar, accept, bevis, accepterar (acronym but with a mix of Swedish and English words)
Apple sold 3.47 million Macs during the quarter, representing a new quarterly record and a 33 percent unit increase over the year-ago quarter. The Company sold 8.4 million iPhones in the quarter, representing 61 percent unit growth over the year-ago quarter. Apple sold 9.41 million iPods during the quarter, representing an eight percent unit decline from the year-ago quarter. The Company began selling iPads during the quarter, with total sales of 3.27 million.
EEPROM Electrically Erasable Programmable Read Only Memory (acronym)

(USB, Universal Serial Bus) (acronym)

bps (bits per second) (acronym)

FireWire (noun)

RJ= Registered Jack (acronym)

Bluetooth (name of a popular wireless personal area network)

“print” (verb)

WLAN Wireless Local Area Network (acronym)

PAN (Personal Area Network) (acronym)

MAN (Metropolitan Area Network) (acronym)

WAN (Wide Area Network) (acronym)

switchen (Swedish form but is not in SAOL)

gateway (noun)

DSL (Digital Subscriber Line) (acronym)

ADSL (Asymmetric DLS) (acronym)

VDSL (Very high-rate DLS) (acronym)

(HSCSD , High Speed Circuit Switched Data) (acronym)

GPRS (General Packet Radio Service) (acronym)

EDGE (Enhanced data rates for GMS Evolution) (acronym)

UMTS (Universal Mobile Telecommunications System) (acronym)

IEEE= Institute of Electronics and Electrical Engineers (acronym)

TCP/IP= Transmission Control Protocol/Internet Protocol (acronym)

HTTP, HyperText Transmission Protocol (acronym)

FTP, File Transfer Protocol (acronym)

SMTP Simple Mail Transfer Protocol (acronym)

POP, Post Office Protocol (acronym)

IMAP, Internet Message Access Protocol (acronym)

URL: Uniform Resource Locator (acronym)

www: world wide web (acronym)

google (googla i SAOL) (is spelt wrong --goggles-- on this page)

HTML (HyperTextMarkupLanguage) (acronym)

Smart Phones (adjective, noun, trade mark)

Apple (name of a company)

IPCC (International Panel on Climate Change) (acronym)

CCS (Carbon Capture and Storage) (acronym)

(postcombustion) (noun, was not at thefreedictionary)

OTS (OverToppingSystem) (acronym)

Heat-Pipe (noun hyphen noun)

COP (Coefficient Of Performance) (acronym)

EER (Energy Efficiency Ratio) (acronym)

brine (saltlag, typ glycol) (noun)

Joint European Torus (JET) (acronym)

International Thermonuclear Experimental Reactor (ITER) (acronym)

Nano-imprint (prefix, noun/verb)

(pr) (http://www.ord.se/)

PRAM (Phase Change RAM) (acronym)

“Swedish tar” (adjective, noun)

Spinning Jenny (adjective, name)

(136 words/acronyms+ the Apple text regarded as a quotation)

78 acronyms + 55 others as follows:
22 names/ 2 titles
20 nouns
3 verbs
7 adjective
2 adverb
4 determiner, prefix, preposition