Innovative class material

What an eBook should look like!

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Abstract:
Living in a very dynamic world, content is very dynamic as well, yet textbooks in school fail to prepare students to use dynamic content. The following paper does not claim to be very scientifically but straight out of experiences made during the governmental and non-governmental work and engaging with publishers during the last year. Thinking of a successful integration of eBooks in school, six preconditions need to be met in order for it to be successful. The integrations of current data, the level of interaction, the ability to adopt to specific learning groups, assessment methods, technical preconditions and transparency are elements that need to be met to have a major benefit over a traditional textbook. If one cannot see the benefit of an eBook right away, he/she is reluctant to use it. Furthermore, the difference between digibooks and eBooks is explained to differentiate between the two forms of digital material. The main challenges are outlined as well as suggestions to overcome obstacles along the way.

Key words:
eBook, digibook, content, textbooks, interaction, assessment, technology, transparency

Introduction and preconditions:

We live in a very interesting time. Content of any sort is available to us within seconds and our levels of communication shifted dramatically from having mainly traditional options like face-to-face communication, letters and consumption of material through books and newspapers. With the introduction of the worldwide web and the hyperlink technology at first and the web 2.0 afterwards, content is available to every user with no filters applied. All of a sudden, scientific research studies might be available as easy as gossip. Nowadays, schools have to prepare their students for a much different world than they used to 20 or 30 years ago. Considering the content available, it is inevitably to suggest that dynamic content needs to be integrated in class in order for the students to getting used to being exposed to different materials in a natural way. Lately, the question has arisen whether or not the traditional content providers such as school books are able to master this challenge satisfyingly. In innovative schools and beyond the question is no longer if we should use electronic material available, but how effectively. Preparing students for a very digital world,

relying on analog material solely is irresponsible. The following paper aims to set principles which need to be met in order to successfully integrate eBooks and what they need to look like in order to have a lasting impact on the learning success in a sustainable way.

Nowadays, innovative and caring teachers are already searching for additional material to integrate in class, to raise students' awareness, provoking curiosity and raising the level of interest in class in general to pick each and every student up. Knowing that the learning curve and pace is different for every student, it would be best to have individual designed material for everyone, but that is on Santa's list of Christmas wishes. On the one hand, we know that mass produced material, such as school textbooks, are not an ideal solution for an interactive class. The content is static, not brought up to speed with new developments and very general when it comes to producing a learning experience for every student. On the other hand, there is enough content available online that might suit the respective class properly in contrast to the textbook - platforms like Scientix[1], LearningResouceExchangeforSchools[2], Open Discovery Space[3], Phet Colorado[4], or any of the European education projects in the last 10 years. The European Commission itself recognized the sheer mass of material available and stopped funding content producing projects, referring to the ones mentioned above. More interestingly, the platform scientix.eu[5] needs to be integrated in every new proposal in the field of S.T.E.M.-education. Considering these aspects, teachers live in a very challenging but interesting time creating tensions between the need of innovative, individual and interactive material and static content providers. In theory, these preconditions prepare the field for something more useful. The idea of a eBook in school was born. A lot of publishers do not know what an eBook should look like or what adaptions teachers need to be able to do to exploit the potential behind this idea. However, there are six principles that need to be understood and met, otherwise the integration of eBooks in class has no reason for being.

1st Current data integrated

The criticism often brought forward not only by students but also by parents is that the data used in class is at least partly outdated. The biggest strength of any portal with dynamic content are the integration possibilities of current data. Students are exposed to current data anyway the minute they leave the school building and engage on social media, watch the news or use Google to complete a homework task. Often students are confronted with major discrepancies when researching a topic outside the school setting. Taking into consideration that data is very dynamic and might be outdated the very next day, those discrepancies will appear anyway. But to have a discrepancy to begin with could be avoided by having real data in the textbook. Wanting to have current data integrated in the textbook, a teacher needs to be allowed to apply changes to the text, to

[1] http://www.scientix.eu

[2] http://lreforschools.eun.org

[3] http://opendiscoveryspace.eu

[4] http://phet.colorado.edu

[5] http://www.scientix.eu

the data or the structure. Again, our world is dynamic, the classroom interaction with 25 people in one room is very dynamic and the textbook should keep up with it. To sum up: When it comes to integrating current data, current information or current topics in society in general, the teachers need to be able to apply them and make it technically easy for students to have access to it.

2nd Level of interaction

The level of interaction is the most important aspect of any good electronic material available. In a modern textbook videos (for example for history class), animations (for physics or mathematics) or learning exercises (for any subject) can be integrated. The biggest advantage for an eBook is to have it all in one place: Theory, exercises, videos, animations and little assessments. A good example of an eBook has been developed by the people working on the LMS[6] platform. This platform offers to integrate learning elements into the daily work of the teacher, the students as well as the parents have access to it, can see the actual grade they are on and find a perfect structure of the school year both contentwise and as far as exercises are concerned. The step to make a good textbook out of the information already available was quite logical. Another good example, even when considering that it is proprietary, is the textbook template offered by Apple Inc via iTunes U. Every template that is offered to promote inquiry based learning strengthens the independent and self organized learning approach helps the students in a sustainable way.

3rd Ability to adopt to specific learning groups

Every teacher is confronted with the challenge of having to adopt material to a specific class because the learning speed is significantly different, the dynamic of the social group or the fact that some students need individual treatment, whether they are very gifted or have some challenges to cope with. The easiest answer to that challenge was to simply bring additional material to school - copies of articles, texts, pictures or even videos. Imagine the possibility to create that material integrated in the textbook and students have access to it by simply synchronizing their textbook - be it on a tablet, notebook, smartphone or home computer.

4th Assessment methods

The question on assessment methods demands a straight out-of-the-box-thinking because up to now, teachers were used to assess content brought to students in a very traditional way. Lately, teachers already began to rethink their assessment approaches knowing that it could be done in a more effective way. Usually school life was divided in two major parts: On the one hand the learning experience, no matter the layout of it, and on the other hand the assessment. Attending school for a few years, students often begin to fear the assessment part so much that the learning experience cannot be successful anymore. School becomes a necessary burden during adolescence. What if, at least in small dimensions to begin with, little assessments are integrated in the textbook as well? It would be quite easy to integrate small quizzes or question at the end of any lesson in the book to check whether the material taught is grasped by the students or not. Adding high scores to every

[6] http://www.lms.at

quiz, students feel the element of friendly competition among their peers. The big assessment day will loose its fear to a large extent. Some schools already use these forms of assessment. The Freie-Schule-Anne-Sophie in Künzelsau[7], Germany, the Hellerup School[8] in Denmark or the BG/BRG Klosterneuburg[9] using Promethean active response systems. The seeds of new ways of assessment are planted, now they need to blossom. A modern textbook needs to provide that opportunity to successfully make the transition of learning to knowing and integrating the learned content to the students' set of competences.

5th Technically easy to use

This aspect might cause the biggest potential of discussions and challenges bearing in mind that nowadays most schools struggle with financial security, that educational policy still does not seem to have any priority and that, financially speaking, times are tougher than they used to be. Hoping that any source of financial power might heavily invest in the infrastructure in schools and provide every student with a mobile device to successfully use the full potential of eBooks, is not realistic. Instead, schools and teachers should do what they are best at: work with the circumstances given! Entering a school class it is hard to find a student not having a mobile device of any sort, be it a tablet, notebook, smartphone or a crossover between a notebook and a tablet. Instead of forbidding mobile phones in school - some schools still do that - we should make use of it. To finance the two missing mobile devices in school is certainly easier than financing a whole class. And going home, most exercises could be done there. An eBook of any kind should also be available on the PC and that is the ultimate opportunity to integrate an eBook in school. Simply by flipping the classroom action - the iTEC[10] project administrated by the European Schoolnet[11] considered this to be very innovative - research could be done at home, collaboration based on the material studied before could be done in school. Technically speaking, an eBook solution needs to be easy to use for the students, easy to manipulate for the teachers in order to adapt it quickly, should have the possibility to synchronize very easily for the students and be available independent of the operating system in the background - be it Windows, Mac, OsX, Android or Linux. Web-based solutions using HTML 5 come in handy as their surface can look like an application but still be applicable over a variety of platforms. Again, in Austria LMS[12] offered a solution that met those requirements but this solution is not wide spread because of one reason: in Austria schoolbooks are financed by the government to a very large degree and therefore publishers do not push for innovations - their payment is guaranteed - and parents think of classic schoolbooks to be cheaper whilst any eSolution turns out

[7] http://www.freie-schule-anne-sophie.de/fsas-kuenzelsau/startseite-kuenzelsau/

[8] http://hellerupskole.skoleporten.dk/sp

[9] http://bgklosterneuburg.ac.at

[10] http://itec.eun.org

[11] http://www.eun.org

[12] http://www.lms.at

to be cheaper for parents once schoolbooks are not financed by the government like in a lot of countries like Italy.

6th Transparent material, transparent grading

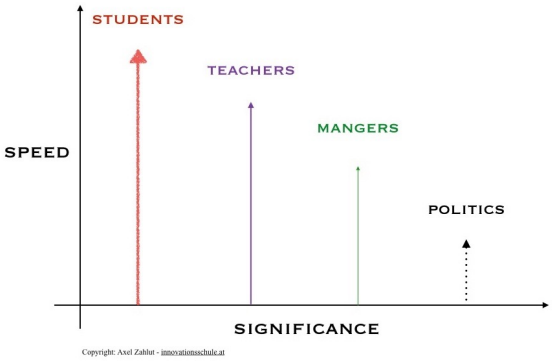
Making use of the full interactive potential of eBooks, the grading process turns out to be more transparent for the students and the parents as well. Knowing exactly what exercises need to be done, what content is covered and how a grade is composed, improves the quality of the classroom interaction. Parents can retrace their children's process in school and a teacher can easily document and argue the grades given.

Difference between an eBook and a digibook

Having had the opportunity to engage with CEOs of major publishers in Austria, I was disappointed to see that their interpretation of eBook avoid at least five of the principles listed before providing the text from a traditional textbook like a PDF and allowing hyperlinks to be used. Of course, copyright issues are brought forward and authors need to be protected from any abuse of their material. Providing the content of a traditional textbooks through a PDF is simply digitalizing the status quo and denying the interactive and personalized opportunities a teacher is given by new technologies. An eBook provides a greater level of interaction, of integration of new material, of assessment methods and still be transparent and in line with the curriculum.

Conclusion

Thinking of innovation in school requires new teaching approaches in school anyway. Getting away from the teacher centered approach towards an student centered approach of teaching demands for a different nature of teaching materials. Sticking to traditional schoolbooks will not serve the students' learning outcome in the long way considering that they are exposed to dynamic content after school anyway whether we approve or disapprove it philosophically. Integrating dynamic content through new teaching materials will prepare students for life after school in a more efficient way. Of course, some are going to argue that eBooks are the third or fourth step on the latter and we have not even established the first two steps, but we need to start somewhere and waiting for the political system to change school will definitely take to long. In the chart below, we can see that significant changes of the political system are not going to be launched by students or teachers, but their impact is immediate and will serve the respective school in the long run.



However, the scenario and preconditions mentioned above need to absolutely be met in order to make the transition from traditional textbooks to eBooks successful. A gradual process of change - at least in Austria - does not seem to be effective knowing that as long as there are not major benefits from eBooks, schools and teachers will stick to traditional textbooks. In addition to that, any implementation of an eBook needs to be well prepared in order for the parents to accept it. Somehow we live in a „what has been good for me cannot be wrong for my kid“ kind of culture. Following the debate about Finland not teaching the script handwriting in school anymore, just the basic lettering, I thought that the resistance brought forward was initiated by adults using a computer the whole day, typing their shopping list into their smartphones and still be immersed in nostalgia. Therefore any change needs to be well prepared and the head of school needs to stand behind it. The practical paper written from experiences made in governmental work drew a scenario under which an implementation of eBooks can be successful and mentioned obstacles on the way, be it the technical infrastructure, payment of traditional school textbooks or financial reasons in general. Another important aspect is the role of the school textbook publishers as they need to reinvent their business on a large scale. If teachers are allowed to manipulate the content of the textbook, the editorial work by publishers is diminished to some degree. During a discussion I had the privilege of being part of, one teachers approached two publishers and asked whether it would be possible at all to have learning elements by a number of publishers and create a textbook out of them. So the future of publishers might be smaller elements of educational material that any teacher could add up to their own textbook. This way one does not need to think about the content being in line with the curriculum and publishers have a business. The future has already started and students try to keep up with it. The question remains: Are schools and publishers ready to play a major role?