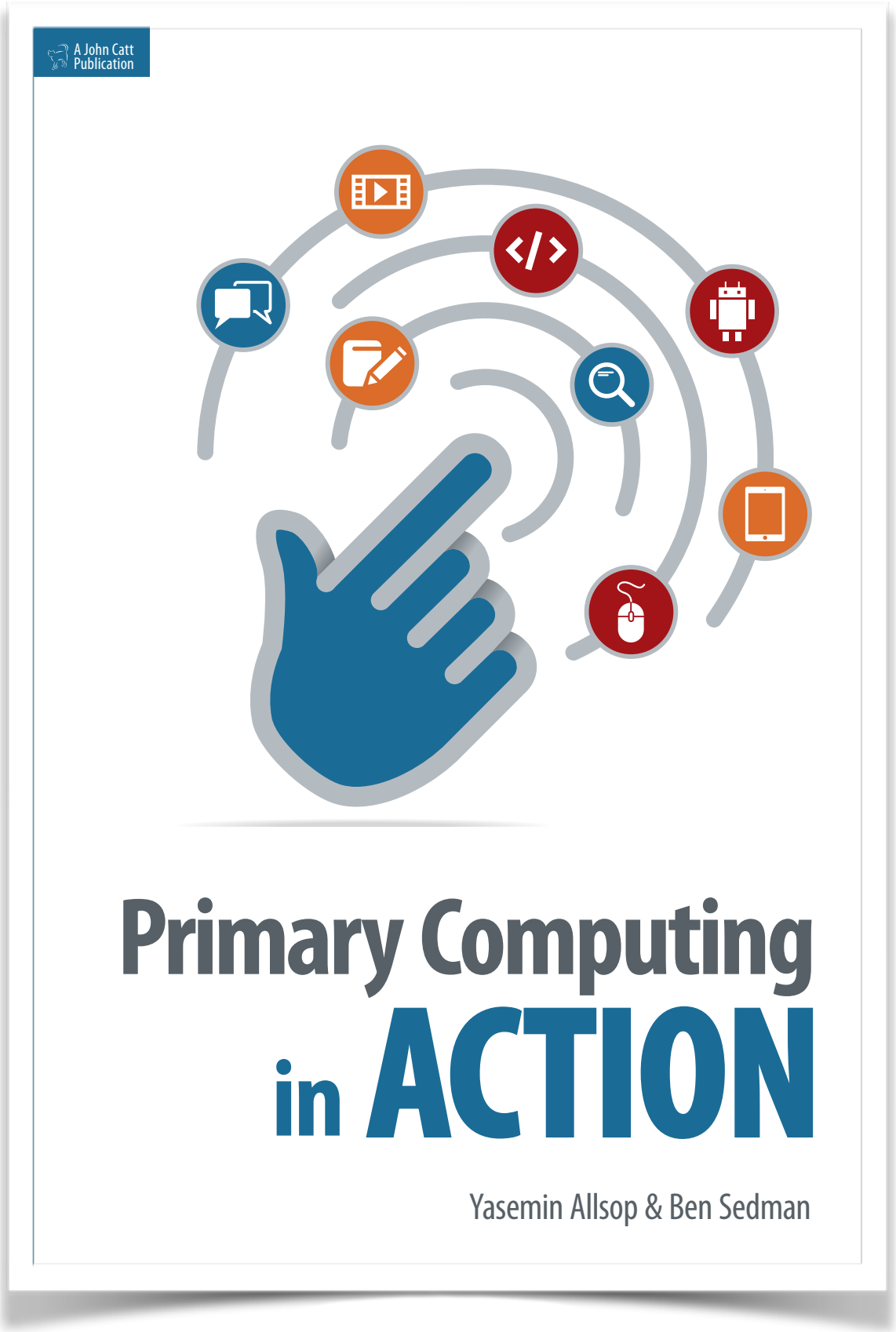
ISSN 2053-5104

ICT in Practice

Transforming education through sharing knowledge and practice
Created by educators from around the world

ISSUE 13 / WINTER EDITION JAN 2016

https://www.matific.com/



Available to order on Amazon

CONTENTS

FROM THE EDITOR

Welcome to the 13th issue of ICT in Practice. In this issue from great resources for teaching mathematics through games to teacher's reflection on the New Computing Curriculum in England, we bring you many interesting articles.

It is always challenging to implement changes to the curriculum directly, as there may be issues around schools' infastructure or teacher's subject knowledge. I always found it useful to ask other teachers about their experiences, as we may be going through the same issues and may share ideas that would be useful for our practice.

In October we celebrated @CodeweekEU around Europe. I am so happy to see more and more people running workshops for children, youth and adults to teach them how to code. In this issue we have an educator from Turkey İsa Badem sharing his coding activities from his classroom. Another great article is from our editor Chris Carter and his colleague Peter Tong, about teaching kids Big Data and applying these concepts to the study of History through the PBL approach. Over the years we have received emails from people who would like to submit a paper in their own language. In this issue we accepted a European research project report in French.

We hope that you will enjoy reading our magazine and become involved through sharing or submitting an article for the next issues.

Best wishes,

Yasemin Allsop
Senior Lecturer in Computer Education
Roehampton University
Twitter: @yallsop

Learning Mathematics through Maths Games

by Brent Hughes, Primary school teacher, Matific Teacher Educator, Full time Maths Nerd

I love teaching, I love everything about it. Impacting the lives of children gave me a true sense of pride that I didn't perceive any career would ever be able to match. My name is Brent Hughes and I am a 26-year-old primary school teacher that after only three-and-a-half short years of classroom teaching has already moved on to another career. Why did I move on so quickly? It is a fair question and one that I myself battled with for a while. The short answer is "numbers".

I calculated that working in a classroom for 40 years with an average of 30 children in my class each year I would impact the lives of 1200 children. I now work as a teacher educator and presenter for an amazing company called Matific. I travel around Australia and New Zealand working with teachers and with schools on how to make the most of classroom technology and how to ensure that their children are both educationally engaged and enjoying maths. In four months of working for Matific I have already impacted the mathematical lives of more children that I would have in a career of classroom teaching. This knowledge allows me to still achieve that drive, that sense of pride knowing that I am still making a difference.

Matific is the brainchild of a few educators who are far more intelligent than I. With the amount of children disengaging in maths at an

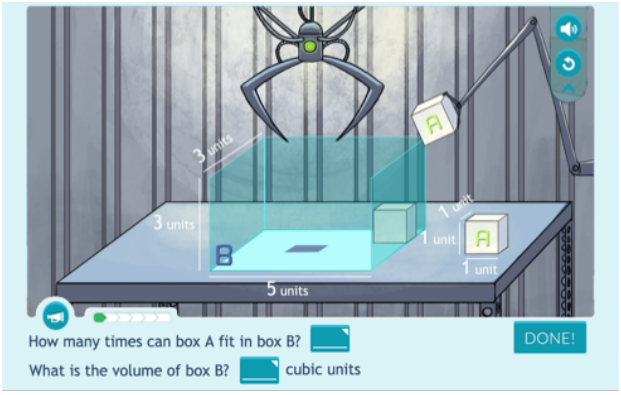
early age growing rapidly; coupled with a huge gaping hole in the market for quality online Mathematical teaching tools, Matific was born.

Matific is a product that is truly like nothing else.

In short it is a K-6 online maths teaching tool. There are a lot of products out there that are also online maths resources and they too claim to be "engaging" and "beneficial".

However, for the children in my class, none of them came close to being as engaging for my students or as beneficial for my teaching. Matific encourages a deep understanding of mathematical concepts where the children are learning through inquiry. Something that I say to teachers consistently is: “Matific creates opportunities for you as the teacher to take your class towards a deeper understanding”. These opportunities are absolute gold in the classroom and with Matific I was just amazed at how often they were arising for my class.
The following are actual quotes from children I have worked with**:**
“When are we doing Maths?”

“Can we do that fractions thing again?”

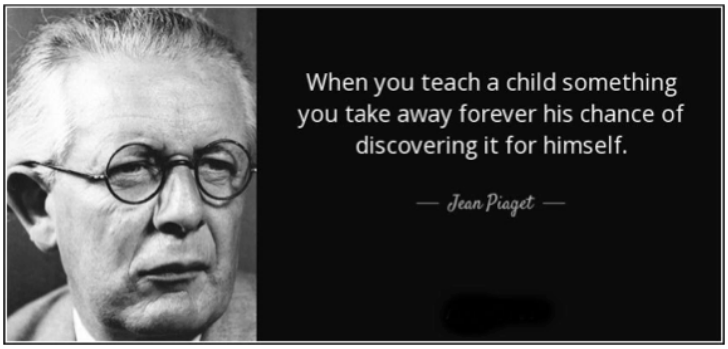


“Can I do this at home?”

“I hate Maths… but I LOVE this!”

“Do they have a game on here for area cause I don’t get that stuff”

“Mr Hughes told my Mum he’d get me to love Maths, that’s why we’re playing this”



The thing that makes Matific so successful is a combination of two very important elements. The first being that the content is designed by educators. This is very apparent to me as a teacher when you look at Matific “gamified” content. You can clearly see the strong mathematical focus for each activity. In a lot of other programs finding the “maths” within a game can be really challenging. This just means when a child is engaging with that product they aren’t really learning anything. The second factor that makes Matific an amazing product is the pedagogical base that everything on there is underpinned by. Matific promotes deep understanding through the children discovering concepts themselves. Something that we can all thank Mr Piaget for.

Matific is now in over 30 Countries and 16 Languages. Hundreds of thousands of people across the world have begun to implement Matific into their classroom practice a few times a week and they are beginning to reap the benefits of the heightened engagement.

Matific offers so much more than what I have discussed here. Things like instant reporting, differentiated tasks across the grade, homework activities, teacher lesson plans etc. To check out everything log on to www.matific.com.au or send me an email brent@matific.com

Festival of Learning with Technology For @CodeweekEU

On Saturday 10th of October we had the Festival of Learning with Technology at the WOW Zone in Wythenshawe, Manchester. There were over 100 participants of all ages, with many different interests. This event aimed to give an opportunity to parents and children to have fun with technology together.

We always talk about how stereotyping in science impacts on children's future decision when selecting subjects to study, both at secondary school level and degree level. What we forget is that parents have a strong impact on children's decisions when it comes to selecting which subjects to study. If they do not understand the subjects, what children learn by studying them and how this would impact on their learning in general, how would they even encourage their children to try it out.

We would like:

- More children to select to study science related subjects
- More girls to be involved in technology related subjects, activities and jobs
- More children from disadvantaged backgrounds to get an opportunity to take part in technology and science related activities.

Therefore we need to reach the parents. Without their help we cannot support children. For example we can teach children how to code at school, but if they are discouraged when they go home, because of their parents lack of understanding how coding helps children to develop valuable problem solving and critical thinking skills, they might stop children from coding at home.

On the day it was amazing to see young kids talking about their experiences of coding activities. It was also fascinating to watch grandparents coding with their grand children. There was a moment when a father screamed with joy when he managed to complete game before his son. There was another moment when a lovely girl managed to turn her picture in to life using Arduino(https://twitter.com/yallsop/status/652793034267082752). Another moment, when a couple of young kids decided to do the Minecraft workshop again and again! There was no way of separating them from Minecraft!

These moments are very precious for us because these are the moments that will help more children become involved in coding and digital making! These are the moments that will help parents to develop an understanding of why we focus on computer science in schools and what they could do to help their children.

We will continue to run events just for families to learn and share together!

Dr. Scratch: supporting teachers in the assessment of computational thinking

by Moreno-León, Jesús & Robles, Gregorio
Universidad Rey Juan Carlos. Madrid, Spain.

There are many technologies that have been created aiming to assist students in the development of computational thinking skills, such as Logo [1], Alice [2] and, especially, Scratch [3], which has become the standard programming language to teach computing in schools. However there is a lack of tools that support both teachers and learners in the assessment of this competence.

Dr. Scratch is a free/libre/open source web tool that analyses Scratch projects to offer feedback to educators and learners by assigning a computational thinking score to the projects. This computational thinking score, which ranges from 0 to 21 points, is based on the degree of development of different dimensions of the computational thinking competence, specifically abstraction and problem decomposition, logical thinking, synchronization, parallelism, algorithmic notions of flow control, user interactivity and data representation, which are evaluated by inspecting the source code of the analysed project [4]. Dr. Scratch also detects certain bad habits of programming or potential errors that are commonly found in the projects of the Scratch repository [5, 6], such as non-significant sprite names, repetition of code, code that is never executed and the incorrect initialization of object attributes, as shown in Figure 1.

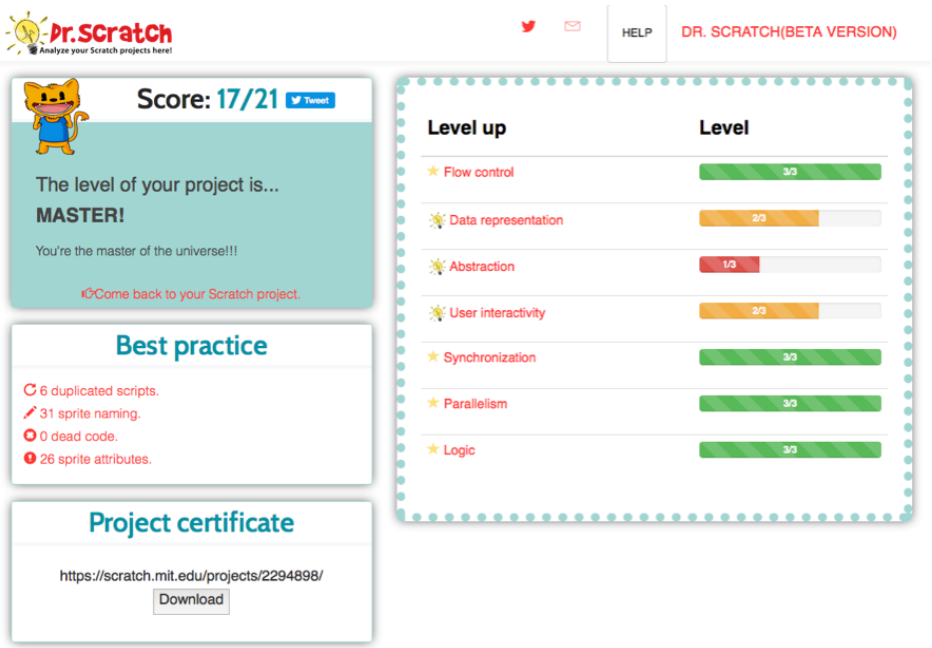


Figure 1 - Dr. Scratch feedback report assigns a computational thinking score and detects some bad programming habits

[1] http://drscratch.org

For each of the bad programming habits detected in the code and for each of the computational thinking dimensions where there is room for improvement, the tool provides links to information that can be used to improve the projects. For example, if a project includes repeated code, Dr. Scratch provides a link to sample source code and an explanation of why this situation should be avoided and how users could improve their project by developing their own blocks (see Figure 2).

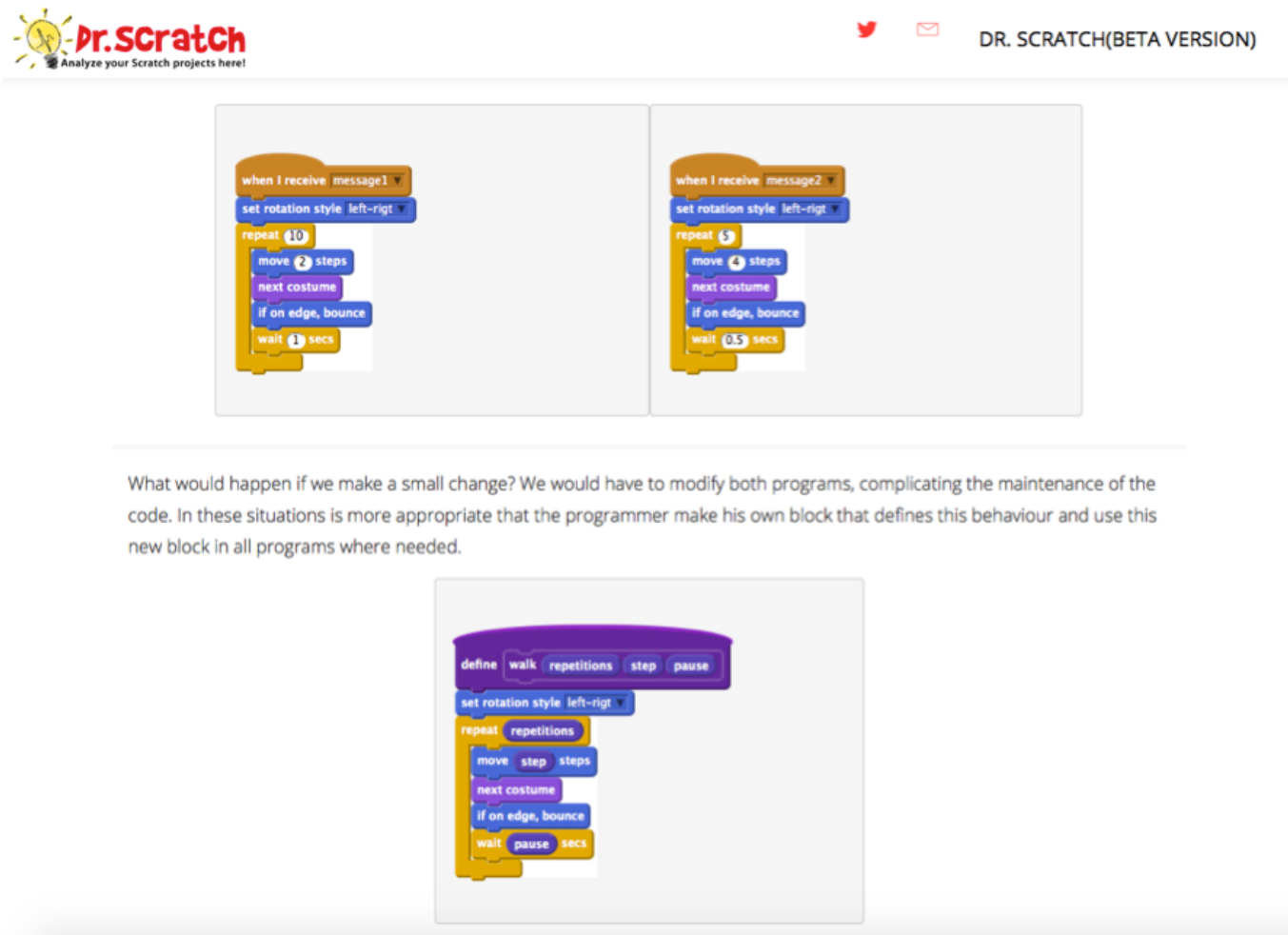


Figure 2 - Ideas and tips provided by Dr. Scratch to avoid code repetition by creating new blocks

Aiming not to overwhelm novice programmers, the feedback report provided by Dr. Scratch in the results page depends on the computational thinking score. Thus, if the score is low the tool will only show basic information of the most important improvements to perform in the code. As the score increases, Dr. Scratch will provide more information of the analysed projects.

By offering a partially gamified interface [7], with scores and levels, Dr. Scratch tries to encourage learners to improve their programming skills. In a previous investigation [8], over 100 learners in the range from 10 to 14 years participated in a series of workshops where they tried to improve their Scratch projects using the advice offered by the tool. The results show that participating students increased their score and, in consequence, enhanced their computational thinking skills.

Dr. Scratch is being used by teachers and organizations from all over the world as a support tool in the evaluation tasks [9]. For instance, the tool can be used to detect students that do not use certain instructions in their projects, such as logic operations or clones, so teachers can prepare specific tasks to help them understand their importance.

“Basically, I really like the opportunity to give the students a totally subjective (and external to their teacher) perspective on their coding and where it does and doesn't quite match up. I also appreciate the reduction in my time in analysis and marking, including trying to find where their code might be in error if it is not doing what it should.
I normally still need to mark to see if they have met the criteria I have set, but Dr. Scratch is a huge help still!”

Paul Herring, St Peters Lutheran College, Australia.

“Students often believe that if their project "works", then their project cannot get any better. I use Dr. Scratch to show weaknesses in the code that can be improved bringing in the foreground all the computer science concepts students are learning actively but silently. Dr. Scratch helps my students to improve their coding skills in a way that can be transferred to professional programming languages. I often get feedback from my students that when they use Dr. Scratch their work seems more relevant to the computer course and that it enhances their feeling of achievement.”

Dimitris Nikolos, Model Experimental Junior High School of University of Patras, Greece.

There are some shortcomings that we plan to address in the near future. So, the analysis of a single project by a learner does not provide a complete picture of his/her computational thinking development. The reason is that there are wonderful simple projects that do not require to be modified in order to include more complex structures (those that give a higher computational thinking score). In the near future the development team of Dr. Scratch will include a new feature to allow the creation of user accounts. In consequence, the analysis of the portfolio of projects of the users will provide a richer picture, as the aggregate scores will allow detecting gaps of knowledge more accurately.

It is worth mentioning that although Dr. Scratch is successfully supporting teachers in the assessment tasks, the tool should not be understood as a replacement of evaluators or mentors, as there are key computational thinking skills, such as debugging, that are not evaluated. Moreover, functionality, originality or creativity, key aspects of programming projects, are not either taken into account in the score provided by Dr. Scratch.

Acknowledgments

The work of both authors has been funded in part by the Region of Madrid under project “eMadrid - Investigación y Desarrollo de tecnologías para el e-learning en la Comunidad de Madrid” (S2013/ICE-2715). The work of Gregorio Robles has been funded in part by the Spanish Government under project SobreSale (TIN2011-28110). We would like to thank as well Eva Hu and Mari Luz Aguado for their technical support with Dr.Scratch.

References

[1] S. Papert (1980). *Mindstorms: Children, computers, and powerful ideas*. Basic Books, Inc.

[2] Cooper, S., Dann, W., & Pausch, R. (2000, April). Alice: a 3-D tool for introductory programming concepts. In *Journal of Computing Sciences in Colleges* (Vol. 15, No. 5, pp. 107-116). Consortium for Computing Sciences in Colleges.

[3] Resnick, M., Maloney, J., Monroy-Hernández, A., Rusk, N., Eastmond, E., Brennan, K., ... & Kafai, Y. (2009). Scratch: programming for all. *Communications of the ACM*, *52*(11), 60-67.

[4] Moreno-León, J., & Robles, G. (2015). Analyze your Scratch projects with Dr. Scratch and assess your computational thinking skills. *Proceedings of the Scratch Conference 2015*, (pp. 48–53). Amsterdam, The Netherlands.

[5] Meerbaum-Salant, O., Armoni, M., & Ben-Ari, M. (2011, June). Habits of programming in scratch. In *Proceedings of the 16th annual joint conference on Innovation and technology in computer science education* (pp. 168-172). ACM.

[6] Moreno, J., & Robles, G. (2014). Automatic detection of bad programming habits in scratch: A preliminary study. *Proceedings of the Frontiers in Education Conference (FIE), 2014 IEEE* (pp. 1–4). IEEE.

[7] Zichermann, G., & Cunningham, C. (2011). *Gamification by design: Implementing game mechanics in web and mobile apps*. O'Reilly Media, Inc.

[8] Moreno-León, J., Robles, G., & Román-González, M. (2015). Dr. Scratch: Automatic analysis of Scratch projects to assess and foster computational thinking. *Revista de Educación a Distancia*, (46).

[9] Moreno-León, J., & Robles, G. (2015). Dr. Scratch: a Web Tool to Automatically Evaluate Scratch Projects. In *Proceedings of the Workshop in Primary and Secondary Computing Education* (pp. 132-133). ACM.

Building Afghanistan 2.0 by teaching Afghan Girls how to Code to improve their Technical Literacy

by Fereshteh Forough
Founder and CEO, codetoinspire.org

What happens if you lock 50 percent of a society's population at home? During the Taliban regime, women had almost zero percent participation in social activities, education and in the workforce. Women were not allowed to leave home without a male companion.

I was born as an Afghan refugee in Iran during the USSR invasion to Afghanistan. One year after the fall of Taliban, my family and I moved to Afghanistan. I got my Bachelors degree in Computer Science from Herat University and Master's degree from Technical University of Berlin in Germany.

Looking back to Afghanistan during the Taliban regime in 2001, there were only fewer than a million students in Afghanistan with almost zero percent of girls. Currently there are more than 8.3 million students across Afghanistan which 40 percent of them are girls .

Considering Afghanistan as a country with an old history, there are still cultural, traditional and social issues which prevent women to communicate and grow within the community. I was teaching as a professor in Herat Computer Science faculty for couple of years. To be a female professor, student or entrepreneur in Computer Science field for an Afghan woman has its own unique challenges and obstacles considering it as a global matter for women around the world as well.

Imagine you are a female student graduating having studied Computer Science in Afghanistan, you are ready to join the workforce and apply what you have learned, although there are some major factors which makes it very difficult to pursue what you want.

- Safety and security barriers: despite the positive signs of improvement in Afghanistan, still it has been suffering from ongoing conflict and war zones in certain areas that limit women traveling by ground. Majority of families prefer that women travel by plane. Although it is the safest and fastest option it's also costly and not a lot of family can afford to purchase the tickets. If a woman finds a job offer outside of her hometown, not a lot of families let their daughters travel and live alone in another another city considering the security issue.
- Social and Cultural concerns: many families are cautious about their daughter's job employment. many of them prefer their daughter to become a teacher, because it is a well respected job in the society and you are getting paid and only deal with women. Therefore, many for graduating students from computer science may become a teachers and won't be able to use the knowledge they have learned at school in the way they want.
- Women entrepreneurs and tech start ups: If you are an woman in Afghanistan and established your tech startup, considering the male dominated market(which is a global issue too), there is a considerable social issue that you have to deal with it. Based on my personal experience when you are approaching customers who are mainly men and explain how you can help them with your tech skills, either by designing website, developing Information Management Systems or any thing they are looking for, most of the time they don't believe in a women's skills or abilities. They respond, "We don't think women can do that!"

The above reasons and many others helped me to establish Code to Inspire, a 501(c)3 nonprofit in January, 2015. CTI's mission is to educate, inspire and empower women in Afghanistan by teaching them how to code and by improving their technical literacy so they can find future internships and jobs opportunities online.

We established the first coding school for girls in Afghanistan in November 2015 at Herat which is located in Western part of Afghanistan. It is a safe and secure educational environment where we host 50 girls from high school daily. All the girls studied computer science. CTI provides a one year educational curriculum for girls which is free of charge. We are teaching students from high school how to design websites, code in HTML, CSS and Javascript, and how to use social media(e.g. Twitter and Linkedin) to engage a larger audience and make a professional profile. Once we involve high school girls in the tech world, we encourage them to select
computer science as their major when they are entering college to decrease the gender gap.

Our targets are girls who are currently studying computer science or girls who have recently graduated.With the computer science students, we are developing mobile applications. The students will find a real issue in society and try to develop an App solution for that, with a real use case. Not only will they learn teamwork and how to make a product from scratch to the final stage but there are will be social impact
issues as well. Imagine the guy who didn't believe in women's technical skills, all of a sudden using an App that was developed and designed by women and is actually is solving an issue. When he starts using app, his act will be empowering women too.

One of the most important challenges that we are going to tackle with CTI, is to find internships and job opportunities for our female students online and to help them earn an income. Thanks to recent technological achievements, the only thing you need to connect to the whole world faster, easier, without geographical/physical boundary is a computer and Internet connection.

The students can use CTI's facility and do their jobs online, therefore, the families will not be worried about traveling and their daughter's safety.

I strongly believe that education is the key for women empowerment which includes financial inclusion of women in a country's economy. More educated women leads to less domestic violence, a decrease in early marriages and less of a maternal mortality rate.

Educated mothers, make the next generation more willing to learn and and this will make more peace and less war.

READY TO CODE YOUR DESTINY?

by İsa Badem, YAŞAR DOĞU PRIMARY SCHOOL ENGLISH TEACHER, @bademmisa
http://isabadem.wix.com/eucodeweek

Hello I am İsa BADEM, an ELT teacher who've been teaching English, Turkish, Drama, Mental (Puzzle) Games and coding in primary level. I use and like not only technology but also integration of it to education. I used to hate computers because I couldn't figure out how the mouse cursor on desktop screen moves easily in twisted and curled directions drawing casual lines in my first computer science lesson in high school. The only thing I knew was that I could go only in 4 directions since there were four arrow keys on keyboard. A lot of water has flowed beneath the bridge. Today we have professions that did not used to exist before 5 or 10 years. So I believe my primary aged students will be working in non-exist professions in the future. CS professions will be one of the best-salary and fastest-growing sectors over the next century. Creativity, problem solving, computational and critical thinking which are the most needed professional future skills can be easily acquired by coding. I integrate, at least try to implement coding to my all lessons as far as I can do for 2 years. Last year I participated in an international eTwinning project "I MAKE MY FIRST APP" even without having smart board, tablet, projector, laptop or desktop in my classroom. I carried out the project through 4th, 5th, 6th and 7th grades. I mostly prefer making unplugged activities. I sometimes collaborate with private colleges and universities for EU CODEWEEK events. Pupils really like coding when they realize how inventive stuff they can create with it. Integrating coding activities to other subjects is really essential as well as teaching coding itself. These are some of my students' reflections on coding, who joined various unplugged activities in different subject lessons.

Talha (8th Grade)

Coding integrated to English Subject

I love technology. I used to only play games with my tablets and desktop till I met coding when I was 7th grade. It was English lesson and the topic was -If Clause-. Teacher had drawn a line, a stickman at the beginning of the line, several barriers and coins in front of the stickman" We were asked to make very simple sentences using -If Clause like

- Stickman moves forward, if there is no barrier
- Stickman jumps, if there is a barrier
- Stickman collects if there is coin

At the end of the lesson we were assigned to complete the tasks of code.org Course 2, the stage 13 Bee Conditionals. After finishing the stage I realized that we in fact wrote a

PLAYLAB for the “I MAKE MY FIRST APP” project. Nowadays I try to create my own game using Unity. It is quite out of the ordinary”

Links of Animation Created by Students

1. https://studio.code.org/c/101546394
2. https://studio.code.org/c/105266641
3. https://studio.code.org/c/105266544
4. https://studio.code.org/c/105266236
5. https://studio.code.org/c/105265975
6. https://studio.code.org/c/105266485

Sude (5th Grade)

Coding integrated to Physical Education Subject

I learned coding last year in 4th grade. We were jogging for a sprint competition in PE lesson. Our English teacher Isa BADEM joined us and asked to make a different run race “The Relay Programming Run Race”. We divided into 4 groups. We were supposed:

to dash over to the image one by one, review it, and write down the symbols in the program

to reproduce the image across us

to debug the program if needed

to finish first to win

The most favorite and challenging part was debugging. We played this several times, with images of increasing difficulty.

Relay Programming Reflections Video

https://www.youtube.com/watch?v=ozv9gDSP3QY

Eylül (5th Grade)

Coding Integrated To Mental (Puzzle) Subject

We have 2 hours Mental (Puzzle) Subject lessons every week and each week we learn new puzzles, problems and different kinds of board games. I took part in a very unusual

2015 December EU Codeweek workshop organized by Robert College which invited Mr Badem with his curious coders including me. Maze puzzle is one of my favorites. We met a new toy called Sphero which is navigated remotely. We wrote programs with drag & drop blocks using Sphero app to get out of the maze. It was amazing. We debugged by sometimes by removing sometimes by adding blocks to move the Sphero ball through the maze corridors.

Elif & Duygu (5th Grade)

Coding Integrated To Free Time Activity Lesson

Last year in 4th grade we did coding activities in free time activity lessons. Some of them were Graph Paper Programming, Real- Life Algorithm, If Else Sentences and Binary System. The most we loved was making Binary Jewelry. We wrote our names in binary system using beads and we did a mini Binary Jewelry Creation Show. We posed for cameras as a model wearing our binary jewelry. We had so much fun.

ELİF

DUYGU

BINARY WORKSHOP

https://www.youtube.com/watch?v=zisIpHscJRE&feature=youtu.be

It is clear that coding practice develop pupil's critical problem solving skills. They enthusiastically insist on looking for the solutions to debug whereas they easily give up while solving a math problem.

TROUGH DEBUGGING

https://www.youtube.com/watch?v=YQ4iZucHcpw

Let's code our new year as splendid as we can Wish you a wonderful year full of coding events!

New Computing Curriculum in Schools: one year on!

We asked Anthony Allday, computing leader at Sacred Heart Primary School in London and Craig Keaney a primary school teacher from Liverpool about their experiences of implementing the new Computing Curriculum. We know that it has been a challenging year for many schools and hope that finding out about how others are managing the changes will provide you with useful information.

Could you please introduce yourself?
My name is Craig Keaney, I currently work at a primary school in Liverpool as a year 6 teacher, other roles include: Computing Leader and E-Safety Coordinator. I am a CAS Master Teacher and HUB Leader.

Have you started to teach the new Computing curriculum in your school? How is it going?

The new curriculum was implemented at the beginning of September 2014. As a starting point, teachers began to look at 'unplugged computing' followed by simple algorithms. Over the term, I began researching a scheme that we could adapt to fit our school, and so began using a scheme created by a local City Learning Centre, adapting it to fit our needs.

After some teething problems in the first year, as a staff, we have become more confident and enthusiastic in teaching the subject.

What are the main challenges you came a cross when teaching the new computing curriculum?

One of the main challenges we faced was teacher subject knowledge and confidence in teaching the new curriculum. This challenge was identified before we implemented the teaching of computing. As a result, alongside the teaching of the scheme, a number of staff meetings were held to develop and support skills required, in addition to having 'drop-in' sessions for teachers. This had an impact on the scheme I had adapted, as the scheme relied of a prerequisite of skills, which we had not fully developed.

Over the last year, teachers in school have worked hard to develop and learn the necessary skills, including learning from the children. This has had a impact on teacher confidence. There continues to be support in place for teachers, if needed, an opportunities for them to attended CPD. It is the hope that, as the skills develop, we will be able to have our own scheme rather than using a established scheme to support teaching.

It is also worth mentioning that amongst staff there was a misconception that the new curriculum was all about coding. The teachers in school did need reassuring that there are elements of the ICT they know still in the program of study.

What about children, what is their opinion of the computing lessons? Do they think, feel different?

The majority of the children have really enjoyed the new curriculum, in my personal opinion, I think it is because it matches the skills of the ‘modern technological child’, compared with the old curriculum. The children have been enthusiastic to show what they can do: from creating games, to augmented reality and most importantly [to them], creating vast structures in Minecraft.

I have noticed that there is a gender divide in knowledge and enthusiasm in the lessons. The boys have show more enthusiasm and stronger skill set than the girls, and from speaking with other teachers in the area this appears to be a common tred. As a result, I have tried to link lessons to a topic they find interesting.

Do you think parents are aware of the curriculum changes? Any reaction?

The biggest reaction I have seen from parents, is not about the ‘coding’ aspect of the curriculum, but the e-Safety aspect. The parents in our school want to learn more about how they can make sure their children are safe whilst online, wether being on the Internet, on Smartphones, texting and most importantly, social media and games consoles. To accommodate this reaction we have held meetings for parents to learn about the benefits of technology, and importantly the dangers that come with it.

Any advise to schools who are still confused about where to start?

- From my experience over the last couple of years, the three best pieces of advice I could offer are as follows:

- You’re not alone - make links to other schools, including secondary schools, and use the resources available to you, such as CAS Master Teachers.

- Make sure there is support structure in place for teachers so they can develop their skills and boost their confidence. Don't forget to use the knowledge of the children; it gives them a great sense of pride.

- If you want to devise a scheme for your school, make sure you know the skills of your teachers and use that to inform what you do. There are free schemes available that can be used help write a scheme that fits your school, but also includes the support needed to boost necessary skills and subject knowledge. Don’t make my mistake and adapt too much in the first instance.

Interview with Anthony Allday, Computing Coordinator at Sacred Heart Primary School

Could you please introduce yourself?
I am Tony Allday and I am the Computing Coordinator at Sacred Heart Primary Roehampton. I teach computing across the whole school from reception to year 6. I have been the school's specialist ICT/Computing teacher for about six years and I am also a CAS Master Teacher.
Have you started to teach the new Computing curriculum in your school? How is it going?
Yes, we have started teaching the new curriculum and so far it has been fine. I am lucky because I teach all age groups and I can see how different years are progressing and I have a good idea where to pitch my teaching depending on a cohort's experience and understanding.
What are the main challenges you came across when teaching the new computing curriculum?
Well, firstly it was coming up with a scheme of work. After a year of trying various things out I have decided to build my teaching around an existing SOW, linking it into classes' core subjects or foundation topic work where appropriate. Again, having taught across the school for some time, I have a good idea what ICT/Computing topics marry well with what foundation topics.
Another challenge is to keep the activities creative, fresh and relevant. Because you are working with technology, children generally expect a wow factor. Luckily we have a very well resourced IT suite and there are lots of great teaching resources out there.
What about children, what is their opinion of the computing lessons? Do they think, feel different?
Lots of the things that are in the new curriculum were already in the old curriculum and I had started trialling some "computer science" concepts before the curriculum came in last year. For instance, I decided to introduce Scratch to all my classes six months before the new curriculum. So it wasn't such a major change for my pupils.
Do the children think or feel different? It is still early days but I would say that they really enjoy their ICT lessons. They like the creative challenges; they are becoming more resilient; and you can see that they are thinking through problems much more and fixing things for themselves.
Do you think parents are aware of the curriculum changes? Any reaction?
Now, this is something that is on my agenda - getting the parents involved more. I have spoken to some and they say that their children have been inspired to try things out at home e.g. Scratch and Kodu. This is great but I need to run a couple of after school sessions for parents to explain the new curriculum and to see if I can't get them doing some stuff with their children themselves at home.
Any advise to schools who are still confused about where to start?
Jump in and have a go. Look at the CAS web site and Barefoot for resources. Come along to one of the basic Scratch training sessions that I run as a CAS Master Teacher.
It is really not that scary and much of what you are expected to teach you would have been doing already.

Data In History: Go Big Or Go Home

Teaching kids Big Data and applying these concepts to the study of History through the PBL approach

by Chris Carter and Peter Tong, Ph.D.

"Information is not knowledge, knowledge is not wisdom, and wisdom is not foresight. Each grows out of the other, and we need them all."
- Arthur C. Clark, Scientist and Author

We would add that data is not even information. Data is potential, nothing more. Data in its raw form is like an unpolished diamond: it is of no value until it is analyzed, tabulated and presented in a form that is understood. Mathematicians, statisticians, scientists and computing scientists transform raw data into comprehensible and usable information. Big Data Analytics (BDA) is the current term used to describe the process of harvesting fantastic amounts of raw data and transforming these data into valuable information that can be understood and used productively to gain insights into trends that are otherwise invisible. People in diverse fields ranging from business, economics, social sciences, arts and humanities, and the hard sciences are realizing the need for understanding what Big Data is and how it can be applied to benefit the commercial, industrial, and academic fields.

At Concordia International School Shanghai we offer a Big Data Analytics (BDA) course, thus providing an opportunity for a paradigm shift in teaching. However, there are no established teaching resources of any kind for Big Data at the high school level and, as with any new subject, it has to start somewhere. The course instructor took the opportunity to teach this course using a "guide on the side" approach, a teaching method discussed by Alison King in College Teaching, "From Sage on the Stage to Guide on the Side."(1) This is a very powerful method of teaching where students are being "guided on the side" by the teacher, as opposed to listening to the "sage on the stage" teaching method where the teacher directly delivers information to the students. In today's learning environment where new subject matters and information are rapidly evolving, it is very difficult to assemble current material from which students can refer. Hence, it is important for students to learn how to teach themselves, how to develop learning material and techniques, how to look for information and how to effective communicate that information to others. In accordance with the proverb, "Give a man a fish and you feed him for a day; teach a man to fish and you feed him for a lifetime," these learning skills not only allow students to learn subject matter in the classroom, but also give students the tools to teach themselves in future new subject areas. The goal of an educator lies beyond the mere retention and application of knowledge, and extends to the ability to create a confident learning environment, where students gain confidence in their learning abilities and become confident in their roles as lifelong learners.

Through this method, students are empowered by their independent learning abilities and, as a result, they feel a greater sense of achievement in both their education and in themselves.

Teaching BDA is most efficient when the teaching method reflects the open-ended and perpetual nature of information as it currently materializes. At the high school level, the methodology of a BDA course delivery refers to King's "guide on the side" teaching method. The teacher is required to have a structured framework of clear guidelines, objectives and goals for the course. This teaching method also allows the teacher to bring out the strengths and insights of their students while allowing students to make improvements to their areas of weakness, through the students' investigation of the subject matter.

This new course is designed as a peer-learning course with the teacher in a facilitator role. For this pilot course, students deliver the daily lessons under the teacher's guidance. The source materials for each lesson primarily come from Viktor Mayer-Schönberger's and Kenneth Cukier's Big Data: A Revolution That Will Transform How We Live, Work, and Think(2), further clarified through images, video clips, and short readings that bring the lessons to life.

While the general concepts of Big Data are taught through student lecture style and peer discussions, the practical learning of this course occurred through its applications. The teacher incorporates both group and individual projects in coordination with the BDA course educational goals, with reference to Bloom's taxonomy as checkpoints: Knowledge, Comprehension, Application, Analysis, Synthesis, and Evaluation. The students are given in-class time for peer discussions and to further research the materials taught after each lecture. At the end of each subsection the students orally present their knowledge and comprehension of the material by creating summaries of topics through multiple means of delivering understanding of the contents.

Since this course is designed to be student-centered and to highlight the students' strengths and interests, students are required to research their topic of interest on Big Data applications. However, the final presentation is more than a summation of their research interests; it requires a large-scale (1.8m x 2.0m) info-graphic and presentation to the school's administration team, the head of school and the parent community, many of whom are industry professionals. The opportunity to present these findings to an audience of high-level business people takes advantage of the human resources available in the community and adds a level of achievement for the students: professional interaction and showcasing.

The course connects students to their school, and local and global communities, in addition to the academic community. Big Data university academicians are brought in as guest lecturers via Skype. The guest lecturers are an important element of this course as they provide external feedback from experts and give students a prime opportunity to learn the relevance and potential of Big Data in post-secondary education and beyond.

The course opens doors to real-world exposure and networking opportunities for the students. One of the students now has a head start in her academic career as she networked with one of the guest professors, and is now collaborating with the professor on an undergraduate research project that she will complete upon entering university. While this student is only one among many examples, the overall outcome of the course surpasses initial expectations, including in the realm of cross-curricular cooperation.

One such cross-curricular endeavor currently in process is applying Big Data tools to the study of History. The collaboration began as a serendipitous conversation between the Big Data and Advanced Placement European History teachers. The conversation quickly led to applying Problem-Based Learning (PBL) to BDA, focusing on a question of history. Problem-Based Learning is “a teaching method in which students gain knowledge and skills by working for an extended period of time to investigate and respond to an engaging and complex question, problem, or challenge.”(3)Two clear and concise videos explaining PBL are Project Based Learning: Explained(4) and Introduction to Project Based Learning (PBL) Process(5). The most organized and useful site for instructors who are considering PBL is Buck Institute for Education(6).

A previous example of historians using Big Data techniques at the post-graduate level can be found in comparisons of American colonial life in the Chesapeake and Massachusetts Bay regions. Prior to recent work historians had little statistical means to put numbers to the arguments, being built largely on primary source documents of the individuals who lived in the regions. Applying Big Data techniques historians slowly, tediously, built data sets from “records of baptisms, marriages, and deaths; property-holding and tax records; civil or criminal court records; military records; ship manifests; slave auction records(7); and cemetery records …” that heretofore had survived separately in numerous archives. By using techniques commonly found in Big Data (aggregation of data, data overlay, anomaly detection, clustering, behavioral analytics, etc.) Historians found hard evidence of shifts in cultural patterns that had previously only been inferred. A stronger case for the economic models being the driving force behind colonial choices emerged.

Working with the AP European History teacher, BDA students took on a similar task of building data sets and applying Big Data techniques to history. The students examined economic data from European countries from the years 1900 to 1939, focusing on the five major players involved in World War II. Their focus question was, to what degree can unique economic stresses account for Germany’s election of Hitler to guide the German state in 1933? Touch-points were created as the project moved forward. Cobbled from notes, these steps were:

- Collect data
- Organize data into logical sets
- Examine data for patterns, anomalies, and changes over time
- Visualization of data begins here
- Arrange data sets into logical order
- Primary and Secondary sets begin here
- Overlay data sets to look for correlations and addition patterns
- Cut data to tell a story

- Visualize data into a “dashboard” that is clear
- Present data visualizations and insights to authentic audience

Time being limited the data-gathering portion was necessarily truncated. B.R. Mitchell’s International Historical Statistics: Europe 1750-2005 (8)served as the source for all economic data. After data sets were painstakingly created, the analysis began. Immediately the teacher became the guide and coach, not the expert. The students generated the questions, found the answers, and taught each other. For a teacher used to being in the front of the classroom it was a significant learning experience.

The students’ insights gained from analyzing the data demonstrate the degree of critical thinking and learning taking place. Sample questions generated, researched, answered and taught among the students include:

- What do I do with missing data? Not every year for every country is recorded.
- Can forms of alcohol consumption be rough substitutes for a “hopefulness” or “hopelessness” index?
- Is petroleum production or gasoline production a better indicator of economic strength?
- Which resources are linked with each other, and which ones have priority over the others?

With the end of the semester the data sets were compiled, annotated, and placed in a Google Drive folder for pass-through to the next class. The entire exercise occupied approximately seven hours of classroom time. Next semester the Advanced Placement European History students will pick up the challenge. With the data sets assembled, these new students will analyze the results to answer the question that began the process.

Samples of student analysis follow:
“Electricity Output-Germany has the most output and a more drastic increase. … USSR held the last place output quantity until 1932 when their output quantity surpassed that of Italy and continues to drastically increase, hitting a peak in 1941. This indicates a quick development in technology and economy in … USSR as their electricity output increases. At the same time, technology in Germany was the best at the time, and rapidly improving. The contrast of outputs shows us the different development patterns of two countries …”

“Output of Artificial and Synthetic Fibers: The numbers for all five countries started about the same … The number constantly increased. Starting from 1935, the differences between the countries are starting to show. Even though all the numbers are getting larger, the output of Fibers started to increase significantly in Germany. Germany reached its highest point in 1942, … probably used to make new clothes for soldiers, build military tents, etc. because it was cheap and stronger. After losing WW1, Germany was probably starting to prepare the gears for soldiers to fight the next battle.”

“Beer + Wine Output / Sail + Steam Ships / Coal Import + Export Correlation: There is a correlation between unemployment/beer + wine production in Germany. Around 1930 unemployment was highest, beer production was highest (probably happiness factor). When Hitler [was] elected in 1933 unemployment was starting to decrease as well as beer production but wine production spiked around 1933-1934. As WWII is starting [in] 1939, beer production started to rise again, but unemployment was decreasing probably because of war.

One … important factor is that steel production started spiking once Hitler rose to power, and kept increasing by a huge amount. Steel is made to use guns, so since Hitler's rise to power, he was probably preparing for war or manufacturing because steel production just spiked once Hitler was in power. Other countries such as USSR and UK started increasing as well exactly on 1933, so something interesting is happening … Electricity usage started rapidly increasing for Germany, so electricity + steel is probably for industrialization."

Upon reflection, the lessons learned were both skill- and content-based, and practical. The students learned to apply their BDA knowledge in a practical exercise that pushed them to work collaboratively, problem-solve creatively, and think deeply. For the instructors it was an exercise of discovery, as the students proved worthy of the challenges set before them. The instructors became sources of wisdom, rather than founts of knowledge. Teachers and students worked cohesively toward a common objective in a collegial spirit of mutual respect. The student-focused nature of the exercise meant a level of discomfort for the instructors, as powers over class direction and time utilization were shared. Yet the uneasiness reduced over time as the instructors learned to trust the students and the students, recognizing the responsibility given them, grew in maturity and responsibility. The time spent in class was the most sustained, focused, and cooperative we had ever experienced. We look forward to continuing the exercise in the next semester.

REFERENCES

(1)Alison King, "From Sage on the Stage to Guide on the Side," College Teaching 41, no. 1 (1993): 30–35.

(2)Viktor Mayer-Schönberger, Kenneth Cukier, and Viktor Mayer-Schonberger, Big Data: A Revolution That Will Transform How We Live, Work, and Think (United States: Eamon Dolan/ Houghton Mifflin Harcourt, 2014).

(3)"What Is PBL? | Project Based Learning," accessed November 30, 2015, http://bie.org/about/what_pbl.

(4)Buck Institute for Education, "Project Based Learning: Explained," YouTube, December 9, 2010, posted November 30, 2015, https://www.youtube.com/watch?v=LMCZvGesRz8.

(5)David Lee EdTech, "Introduction to Project Based Learning (PBL) Process," YouTube, May 12, 2015, posted December 5, 2015, https://www.youtube.com/watch?v=08D0dBGIzYQ.

(6)"Project Based Learning," 2015, accessed November 23, 2015, http://bie.org/

(7)William Bruce Wheeler and Susan D. Becker, Discovering the American Past Vol. 1: A Look at the Evidence to 1877 (United States: Houghton Mifflin (Academic), 2002).

(8)Brian R. Mitchell, International Historical Statistics 1750-2005: Europe (International Historical Statistics Europe), 6th ed. (Houndmills, Basingstoke, Hampshire: Palgrave Macmillan, 2008).

L'IMPACT DES SOURCES D'APPRENTISSAGE EN LIGNE A L'ACCES A L'INFORMATION DURABLE, UN EXEMPLE INTERNATIONAL

by F.Günseli ÖZKAN. R.Tayfun GEDİK
www.office-fr.com, http://elearning-turkey.eu, gozkan@office-fr.com

Introduction:
A nos jours, grâce aux environnements sociaux et éducatifs reliant les communautés virtuelles sectorielles, la formation ne se limite plus à la classe. Elle se transforme en solutions tout à fait exclusives du fait de la caractéristique globale et durable des compétences professionnelles. En fait, ni les développeurs des technologies de l'information, ni les décideurs et acteurs qui influencent les politiques éducatives n'ont su prévoir la vitesse de l'impact sur l'éducation des technologies émergents. L'internet s'est introduit à l'improviste dans notre vie quotidienne en tant qu'un instrument servant à développer les compétences et la connaissance.

Ceci se base sur deux raisons :
La pression de la concurrences sur les qualifications professionnelles force les standards des expertises. Parallèlement, les technologies offrent des outils illimités pour accéder à l'information. Par ailleurs nous observons un nouveau profil d'apprenant qui adore la technologie et préfère un accès rapide à l'information, d'autre part nous faisons face à des acteurs de l'éducation professionnelle se positionnant distancés à la technologie.

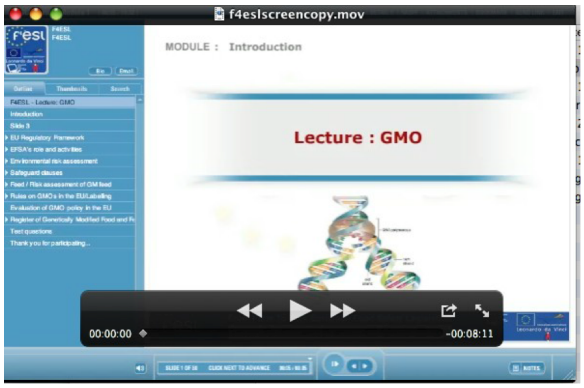
Pour le succès d'un programme éducatif en ligne il importe de bien analyser ces deux profils. Ceci concerne toutes les étapes de l'apprentissage allant du design de l'interface web à l'architecture, des paramètres d'enregistrements aux méthodologies etc.
Dans cet article nous allons passer en revue l'expérience acquise durant un programme pilote en ligne exécuté dans le cadre d'un projet européen LLL programme, exécuté à l'internationale avec la participation de plus de mille bénéficiaires.

Nom du projet :
" F4ESL ,Cours sur la Législation Européenne sur la Sécurité Alimentaire du Champ à la Fourchette"
Profil participant: Licence, maitrise, Phd
En langues: Anglais, Turque, Bulgare

L’objet: Cours en ligne pour enseigner la législation européenne sur la sécurité alimentaire
Bénéficiaire cible: Ingénieur en agriculture, ingénieur alimentaire et stagiaires.
Les cours sont préparés en collaboration avec les projets partenaires sous la coordination du projet leader KSL, Kalite Sistem Merkez Laboratuarlar grubu (TR), L’Universite Agricole Nitra, Slovaquie, TACIYL l’Institut Espagnole des Technologies Agricoles Castilla et Leon , office-fr Turquie, L'Association de la Sécurité Alimentaire, Accent Consultance Bulgarie, SKY Consultance qualité, Tr, Le Ministère turque de L'Agriculture, la Direction en charge du Controle et Protection Alimentaire, Les services Alimentaire et Vétérinaire de Lettonie, Le syndicat des Employeurs de l’Industrie Alimentaire, l’Association des Exportateurs Alimentaires.

Notre Approche:
Les règles et standards visant une standardisation des droits sur les propriétés intellectuelles, les infrastructures de communications, les matériaux d’apprentissage, les softwares se développent d’une grande vitesse. Le monde, axé sur la valeur économique de l’usage des technologies de l’information dans les secteurs non TIC et grâce aux standards qui le permettent, s’oriente de plus en plus vers la production des matériaux d'éducation bon pour tous.

Aussi bien au sein des Universités que dans le secteur public et privé, des projets géants sont déployés à l’international. De ce fait, dans ce projet, nous avons développé nos cours et leçons dans les standards internationaux, éditable et réutilisable. Comme les outils de l'éducation se diversifient durant la formation en ligne par rapport à l'éducation traditionnelle nous avons intégrés tous les outils disponible de Moodle dans notre plateforme. Les outils de communication, dictionnaires en trois langues, forum, chat , vidéo, facilités y ont été implémentés. Comme les cours étaient en trois langues, notre budget n’a pas permis l’intégration de sons aux leçons, de ce fait elles ont été conçues sans son. Les matériaux éducatifs ont été préparés sous le format de Scorm 2004 , implémenté sur la dernière version de Moodle. Nous avons aménagés les utilités catégorisation, statistique, évaluation et reporting de Moodle suivant nos objectifs d’apprentissage. Nous avons crée un environnement déployant toutes les sources et outils de Moodle.



Les objets d’apprentissages ont été développés pour chaque leçon dans les standards internationaux, sous le format Scorm 2004, ces paquets de Scorm indépendant, réutilisable et modifiable chacun de 15-20 minutes ont été implémenté au sein du plateforme. Nos paquets Scorm, sont d’une interopérabilité reconnue, peuvent communiquer avec différent LMS’s. Dans les cours, le parcours d’apprentissage est contrôlable . Chaque leçon offre un environnement contrôlant les séquences et le processus. Des accents flash en sont utilisés. Des règles régissent le rythme et le surf à travers les leçons. Le fait que chaque leçon est indépendant permet une flexibilité pour des modifications ultérieur.

Nos objets d’apprentissages et le plateforme LMS «F4ESL» que nous avons modifié d'après nos besoins, ont été fortement appréciés par les étudiants, enseignant du point de vue de sa facilité d’usage, son indexation interne, le déploiement des sujets, matières, contenu et son accessibilité. Nous disposons de tous les outputs des sondages effectuées à travers les cours, ainsi que tous les “records” des bénéficiaires durant l’apprentissage.

Les partenaires ont fourni, le scenario d'apprentissage, les textes, images, vidéo relatifs aux cours au fur et à mesure du développement de chaque leçon. Les documents instructifs relatifs à l'utilisation du plateforme et les règles régissant ont été préparés et intégrés tout au début du lancement des cours, ainsi que la biographie des enseignants, leur adresse électronique, les liens de références, l'aménagement des outils de communication et d'instruction ont été mis en exécution en premier lieu. Les bénéficiaires ont été sélectionné et inscrits. Ils ont accedé aux cours, un service de support leur à été disposé, les étudiants et enseignant ont été autorisé a télécharger leur propre document.

Les cours n'ont pas été développé sous le format d'ebook. Le scenario d'apprentissage en respecte les besoins des bénéficiaires sous une forme particulière à ce sujet. Les matières et contenus sont bien categorisés et facile à suivre, encouragent l'usage des méthodologies d'apprentissage similaires.

Les cours ont été fortement apprécies par les bénéficiaires , d'après un sondage effectue (%95-98) auprès des bénéficiaires. Les étudiants sont invités dès leur accès au plateforme à respecter le code d'utilisation, les propriétés intellectuelles des contenus et d'accomplir les taches clairement définis au lancement des cours. Durant les cours, l'attitude des bénéficiaires a été suivi quant' à l'apprentissage, la communication, les tests, et le forum. L'atout additionnelle des LMS par rapport à l'éducation traditionnelle est sa fonctionnalité de traçabilité. Cette fonctionnalité n'est pas très bien connu par les bénéficiaires. Au fur et à mesure de l'avancement des cours, cette capacités a été de temps en temps dévoilé par l'administrateur ou découverte par les bénéficiaires mêmes. Âpres avoir réalisé que leur succès et suivis, ils se sont beaucoup plus concentré aux cours. Finalement ils ont complété 35 leçons groupées sous 5 modules, ont été forcé à compléter une évaluation du cours après chaque module. Ils ont été invite une évaluation finale après l'ensemble des cours. Nous avons observé les dernières 24 heures un rush des participants souhaitant le compléter à la dernière minute. Les cours ont été lancé en premier lieu en anglais, le profil de bénéficiaire était comme suit: des cadres travaillant dans les institutions internationales en matière de la sécurité alimentaire, des académiciens et des professionnels du secteur privé. Ils ont complété une forme sur le web, sélectionné d'après les critères pré établies sur leur métiers ou sur leur précédente formation. Les identifications et mots de passes de chaque bénéficiaire leur ont été communiqué peu avant le lancement. Les 415 premier participants ont eu plein accès au plateforme durant deux mois 24 heures sur 24. Ils ont été invité à changer leur identifiant et mot de passe à leur premier accès. Cependant nous avons observé que certains utilisateurs ayant oublié leur mot de passe ont rencontré certaines difficulté à le récupérer par leur adresse électronique du fait qu'ils avaient apposé une différente adresse (de celle utilisé lors de l'inscription aux cours). Quelque bénéficiaire qui se sont inscrit en utilisant deux adresses de messagerie différentes ou bien qui ont utilises la même adresse électronique et deux noms differents, ont naturellement été inscrits mais pas admis aux cours. Une autre expérience découlant des services de support : l'accès aux cours qui est limité à 1 seul utilisateur a été refusé aux utilisateurs qui avaient oublié de fermer leur compte sur un autre ordinateur ou bien qui on partagé leur identifiant et mot de passe avec quelqu'un d'autre. Ces cas nous ont été signalé comme problèmes techniques or, il s'agissait des problèmes d'utilisateurs.

D'autre part, les utilisateurs ont souvent confondu les notions «accès web»et «accès LMS», ont fait part des problèmes d'accès au plateforme, pourtant ils essayaient leur identifiants sur la page d'accueil au lieu d'aller sur l'LMS.

C’est pourquoi, nous avons décidé d’ajouter dans le futur une note explicative à l’attention des bénéficiaires au moment de l’envoi des identifiants par email et ajouter un visuel sur la page d’accueil.

Du fait que les bénéficiaires du premier cours (en anglais) venaient de 55 pays (de different time zones) cette situation a créé des difficultés durant les services de support.

Pour le second et le troisième cours, le plateforme initiale structuré en anglais a été lancé en deux nouvelles langues le turque et le bulgare. 700 nouveaux bénéficiaires ont été inscrits a cette phase. Nous avons reçu au total 2026 candidats, après une sélection initiale, plus de 1000 participants ont été inscrits et bénéficié des cours.
Les deux mois consacré à chaque langue a été est satisfaisant du point de vue de l’apprentissage. Nous estimons aussi utile de conseiller de temps en temps aux bénéficiaires de ne pas attendre la dernière minute pour compléter les cours.
Il sera aussi utile de les informer que leur parcours d’apprentissage concernant l'accès, les leçons suivis, les enquêtes remplis, test etc sont tous enregistrés par le système.
Concernant les tests, nous avons due envoyer à certains utilisateurs à titre de justification. Les copies d'écrans relatives à leur activités au sein du plateforme...

Des le début, toutes les phases se sont déroulé en ligne de l’annoncement des cours, à la sélection, l’inscription, l’évaluation, le reporting et la certification. Deux services de support l’un administratif l’autre technique ont été lancés. Les examens ont été effectués à base de module, les questions sont sélectionnés randonnées à partir du récipient de question. Les examens étaient limites au temps. Les utilisateurs ont bénéficié de 3 accès, le meilleurs point a été pris en considération. L’obligation d’accomplir toutes les modules est sollicité. Finalement les utilisateurs ont demandé un examen de compensation pour refaire les modules qu’ils n’ont pas réussi.

Sources:
-F4ESL - From Farm to Fork European Food Safety Legislation Training Programme Lifelong Learning Program (LLP) “Leonardo da Vinci” (2009-1– TR1–LEO0508647).
-SK/01/B/F/PP-142 243 - Online Distance Learning Module in European Agrarian Law by The Slovak University of Agriculture in Nitra.
-http://www.office-fr.com
-http://elearning-turkey.eu

Du fait que les cours sont clôturés en 2012, les liens du projets ne sont plus actifs mais les cours sont disponibles en soft format: http://www.f4esl.eu , http://trainee.f4esl.eu

Version turque de l’article :
http://www.midasebook.com/dosyalar2/eogrenme2.pdf page 389
Hard copie: E-Learning en Turquie, etat des choses et examples publication de l’Universite Anatolie

This book has been written for primary teacher trainees, in service primary school teachers and teacher support staff to develop their knowledge and understanding of primary computing. The book is also useful for parents and teachers, from any country, to gain an insight into what young children learn, when working with different types of technology, from the Early Years Foundation Stage through to Key Stage 3.

EDITORS

Yasemin Allsop

Yasemin Allsop worked as an ICT Coordinator in primary schools in London for almost 10 years. She is currently employed as Senior Lecturer in Primary Computing and ICT at Roehampton University. She has MA ICT in Education from the London Knowledge Lab, University of London. She is also an MPhil/PhD student, focusing on children's thinking, learning and metacognition when designing digital games. She published widely in quality journals and presented at conferences. She is the editor of an online magazine called ICT in Practice where educators from around the world share their experiences of using technology in education. More information can be found on her website at
www.yaseminallsop.me.uk

Ben Sedman

Ben Sedman is a Senior Lecturer within the Faculty of Education at Manchester Metropolitan University. Previous to this role he taught for 7 year within the Primary sector.
Ben currently teaches within the STEM Division at MMU, delivering primary D&T and Computing sessions to trainees and teachers. He has completed his MA in Education, has been involved in a European funded project and helps coordinate the Erasmus Exchange Programme.
Ben is interested in a range of creative teaching approaches and enjoys photography. This is his first book. Some of his work can be viewed at www.bensedmanphotography.com

CHAPTERS & AUTHORS

1) What is computing? – **Yasemin Allsop**
2) Computing in Early Years - **Eleanor Hoskins**
3) Tell a story and make a game –**Yasemin Allsop**
4) Computer science unplugged! - **Alessandro Bogliolo**
5) Tinkering time: Adventures in 3D designs -**Selcuk Ozdemir & Ahmet Celik**
6) Film, animation and podcasting: lets get creative! – **Ben Sedman**
7) Embedding computing in science -**Maggie Morrissey**
8) Linking mathematics and computing – **Sue Pope**
9) E-Safety and digital citizenship – **Ben Sedman**
10) Imagine, write and share: blogs, wikis and – **Ben Sedman**
11)Transition to Secondary – **Ellie Overland**
12) A brief overview of monitoring, evaluation and assessment of computing - **Yasemin Allsop**
13) Planning and assessment of computing and computational thinking- **Mark Dorling and John Woollard**

** We would like to thank **Susan Adams** for her contribution to Chapter 3 with an activity.*

Published by

ictinpractice.com

London, UK