

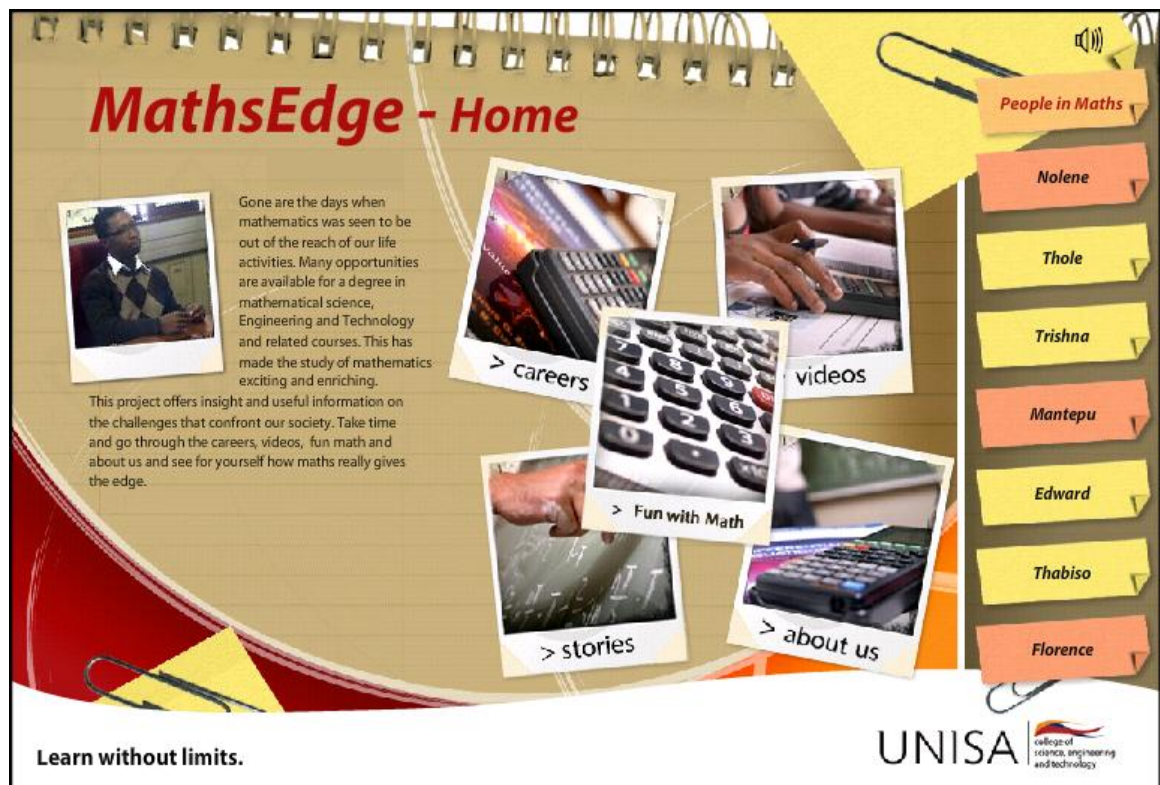
## Review of the newly launched website [www.MathsEdge.org.za](http://www.MathsEdge.org.za)

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MathsEdge is an academically inspired (yet teacher and learner focused) initiative of the University of South Africa (UNISA), College of Science, Engineering and Technology (CSET) headed by Prof. Mamokgethi Setati as the executive Dean. Here I provide a review of this website which aims to market mathematics as a field for further study. It does this through providing access to critical information such as mathematical careers, the significance and practicability of mathematics, information on mathematically related university courses across South Africa, and providing access to inspirational achievements of South Africans working in the sphere of mathematical science, engineering and technology - all this at the touch of an internet button. While CDs are available for those who do not have internet access, the advantage of exploring the internet site lies in being able to watch the video clips and play the games online, and of course in the way such websites are regularly updated with the latest information.



When Prof. Setati told me about her vision for the project in 2008 I was excited about it, and have been eagerly awaiting its launch since then. At the time I was working as an Associate Professor at Wits University and thought that this type of product would be fantastic for the teacher development programs I taught on, such as the PGCE and the Honours in Mathematics Education. I had always struggled to support students in understanding the world of mathematics beyond that focusing on ‘education and schooling’, and I knew that it was a missing element in my work with post graduate pre- and in-service mathematics teachers. We focused on Mathematical Knowledge, Mathematical Knowledge for Teaching, and Pedagogical Knowledge, but seldom focused on what it would mean to help learners develop powerful learning trajectories that would take them into the world of mathematics beyond the education terrain – the terrain where mathematics changes the world we live in and shapes the future not because it is a school subject with high status and university points but because it impacts on our world.

Since my return into the school environment in 2009 as the director of Mathematics for St. Andrew's College and DSG, I have been even more eager to explore this initiative. As teachers and as the director of the Centre we are asked – “*Maths, so what?*” Our top performing learners appreciate that it is an important subject for both status and university access to various degrees. They study it with the aim of gaining a distinction in Mathematics and many of our learners indeed achieve this. Last year a third of our learners taking Mathematics achieved a distinction, and yet only a few of these learners are studying mathematically related courses beyond matric. In particular, the number of girls pursuing mathematically related studies at university was alarmingly low. Focusing only on increasing matric mathematics results holds no guarantee that there will be a related increase in the number of learners studying mathematics after matric. Learners can master mathematical knowledge while simultaneously holding the belief that it has no value beyond its currency in terms of status and points access. More is thus needed. This is where I feel the MathsEdge website makes a particular contribution because it focuses precisely on mathematics *beyond* the school curriculum.

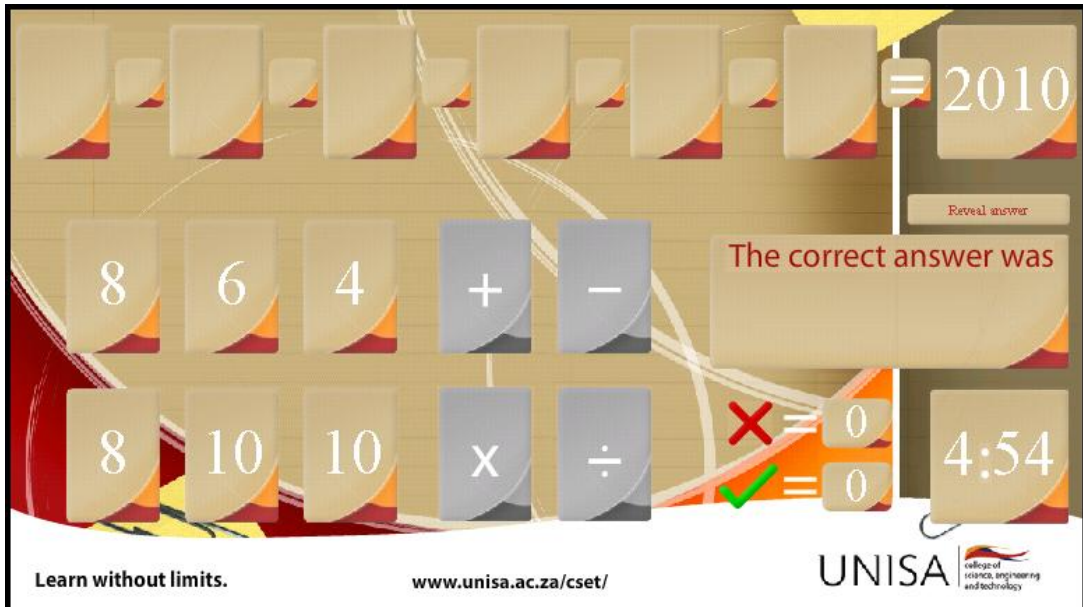
Etienne Wenger argues that learning is the management of a journey with respect to identity. He argues that too often in schools skills are the focus at the expense of helping learners to develop identities, pathways and trajectories into the future. We all accept the power of a vision and almost every book on finding one's path begins with powerful vision-building. Yet the opportunity for learners to develop a vision of a mathematical career is severely limited by learners', teachers', and teacher educators' understandings of what mathematically related careers are out there. Our imaginations are limited to what we have access to and thus to well-known pathways such as 'dentistry, engineering, medicine'. Yet, as MathsEdge clearly reveals, these are but the tip of the iceberg.

I loved the investigative journalism type stories about South Africans from diverse backgrounds who are doing fascinating work with mathematics - work that is indeed changing the world we live in - by solving problems relating to traffic flow, mining, global warming, medical breakthroughs (to name but a few). I learnt about the breakthrough mathematical discoveries of Michael de Villiers and the de Villiers points named after him (Michael is a regular contributor of articles to LTM). The range of stories (accompanied by videos) dispels for me the world of Mathematicians as nerdy, aging, socially odd people and puts a face to the world of working with mathematics as a funky, hip and happening place where people like you and me engage with passion and innovation with mathematics to make a difference in this world.

So once a teacher has used MathsEdge to help inspire learners to seek mathematically related studies beyond matric, then what? How do I as a teacher and adviser help learners to find information about university pathways? How can learners access this information? This has been an aspect with which I have struggled. When learners seek my advice on where they can study actuarial science (for example), and where they can find admissions requirements, it has taken me hours of internet research to provide them with answers. The MathsEdge Careers link provides one with a summary of all South African universities' offerings in relation to Mathematics studies. By simply clicking on any one of these courses, one is taken directly to that link – not to the general university homepage, but to the place where all the information pertaining to that specific course or field of interest can be accessed. I have also heard that information about possible bursaries and application forms will soon be added. This is an incredible tool for teachers and learners alike as it simplifies the process considerably and makes important information readily accessible.

Of course, inspiring learners mathematically is also about having fun and appreciating the beauty of mathematics - and there are few in this world who cannot say that they've enjoyed working with a mathematical puzzle of some sort, be it the Rubik's Cube, matchstick problems or maths riddles. Here too MathsEdge makes a contribution with various links exploring the beauty of maths but also through the production of the MathsEdge 2010 Game. In this game one is presented with sets of numbers and operations – the challenge is to place the numbers and operations in the correct sequence so that the calculation gives a final answer of 2010. I experimented with this game with some of the learners in my classes, and after an hour of playing the learners didn't want to leave! While we only managed to correctly sequence four sets of computations to give us 2010, the discussions that unfolded while playing the game

were mathematically rich and meaningful. The online version of this game thankfully allows for different levels of difficulty!



This creative side of MathsEdge is supplemented with some inspirational quotes relating to Mathematics – my favourite being “The man ignorant of Mathematics will be increasingly limited in his grasp of the main forces of civilization” by John Kemeny. Indeed, Prof. Setati makes this point clearly in the introduction to MathsEdge – one cannot be an informed and critical citizen without understanding mathematics. Thus, put in layperson’s terms, Maths gives you a critical edge which is needed in a world where pyramid schemes and hire purchase agreements regularly pull the wool over the eyes of the less mathematically astute.

In ending I would like to say that I believe that MathsEdge provides those in mathematics education, both teachers and teacher educators, with a way of expanding our work to include supporting learners in developing powerful mathematical learning trajectories into the future. Above all, it provides a hip, young, appealing, funky, happening and diverse face to the world of mathematics.



VIA THE WEB

Looking for some other interesting sites on the web?  
Try the following:

<http://www.khanacademy.org>

<http://www.m-a.org.uk/jsp/index.jsp?lnk=421>

<http://kasmana.people.cofc.edu/MATHFICT/default.html>

[http://homepage.smc.edu/nestler\\_andrew/SimpsonsMath.html](http://homepage.smc.edu/nestler_andrew/SimpsonsMath.html)