Keynote User Presentation

Prof. Steven Furino, Associate Dean - Undergraduate Faculty of Mathematics, and Rachael Verbruggen, Instructional Digital Media Developer - Lead Math Specialist, University of Waterloo

From 5 to 50
In early 2010, the Faculty of Mathematics at the University of Waterloo offered only 5 courses online. Now, the Faculty offers almost 50 with the two most recent courses being deployed wholly inside Maple T.A. This talk will focus on the use of Maple T.A. as a content and assessment platform for the Faculty’s imminent launch worldwide of open, online, mathematical courseware.

Steven Furino is the Associate Dean for Undergraduate Studies in the Faculty of Mathematics at the University of Waterloo. He is a winner of the university’s Distinguished Teaching Award. He is also the director of the Faculty’s online efforts and has been heavily involved in online courses himself since 2010.

Rachael Verbruggen graduated from the Faculty of Mathematics at the University of Waterloo and, not long after, started working at UWaterloo’s Centre for Extended Learning where she is the lead developer of online math courses. She was the first developer to be hired to work exclusively on math courses and now works with a large team including other developers, instructional designers, production managers, and quality assurance specialists to create fully online undergraduate, graduate, and professional development courses for the Faculty of Mathematics.

Keynote User Presentation

Meta Keijzer-de Ruijter, Consultant for IT in Education, T U Delft University

Revolutionizing Learning Using Maplesoft Technology
In 2008 TU Delft adopted Maple T.A. as its general test system to administer several types of assignments, weekly practice tests and digital exams. Maple T.A. supports a wide variety of question types and topics including English, Math and Engineering courses.

The use of the system has grown steadily with all faculties using Maple T.A. quite extensively, and an exam desk taking care of all logistics around digital exams. Furthermore the University is now looking for ways to extend the knowledge base of Maple T.A., by sharing their experiences in creating adaptive questions and MathApps. This presentation outlines this transformative process in digital education at Delft.

Meta Keijzer-de Ruijter graduated from the faculty of chemical engineering at TU Delft in 1992. After working in the chemical industry for several years she studied corporate education at FCE. In 2004 she returned to the TU Delft as the head of computer training department. Soon after, she developed the digital testing system at the university, overseeing software selection, establishment of the support organization, teacher training and computer exam rooms.

User Presentation

Dr. Jonathan Kress, Senior Lecturer, The University of New South Wales

Effective Strategies for Online Testing in Large Classes
Maple T.A. has been used at the University of New South Wales in large and small first year classes since 2008. It is used to provide students with the opportunity to practice skills and test their knowledge prior to tutorial classes or pencil and paper tests. It is also used to administer assessments to large classes under strictly supervised conditions in a computer laboratory. Providing students with immediate feedback wherever or whenever they want is popular with students and has at the same
time reduced the need for staff to undertake some of the more mundane aspects of grading. However, clear instructions and effective strategies are necessary to ensure that everything runs smoothly. This presentation will discuss how the use of Maple T.A. in first year mathematics at the University of New South Wales has developed over time and the strategies used to make sure it serves its intended purpose.

Jonathan Kress is a Senior Lecturer at the University of New South Wales in Sydney, Australia, where he has played a significant role in the introduction of online teaching resources and assessment to large first year mathematics classes.

Panel Discussion

Using Technology to Motivate High School Students
Moderated by: Louise Krmpotic, Director, Business Development and Content Authoring, Maplesoft

User Presentation
Grahame Smart, Math and E-Learning Consultant

Maple T.A. for Investigative and Interactive Learning and Grading Leading to Double Pass Rates in Tough London Schools

Maple T.A. has been instrumental in delivering outstanding progress and results at A-level at Forest Hill Boys School in South East London. This was achieved through a mixture of investigative scenarios and automated algorithmic questions that maximised the functionality of the Maple T.A. platform.

Grahame Smart is a Maths AST (advanced skills teacher) who also works as a Maths and E-Learning Consultant for many leading companies and educational organisations. He also presents at many National and international Conferences on both E-learning and mathematics.

User Presentation
Prof. Marina Marchisio, and Dr. Alice Barana, University of Turin

University of Turin: Strong and Wide Use of Maple T.A. to Better Prepare High School Students for University

In the University of Torino Maple T.A. is used in several contexts, and this presentation will specifically focus on projects that are aimed at improving math results of high school students. In collaboration with the town of Torino, the University runs several projects for secondary schools, especially for students with difficulty in math. The projects are aimed at reducing drop-out rates of students, and in preparing them for higher studies. The university also runs a high school teacher training program helping teachers adapt Maple T.A. in their classes. The training includes basic-level classes and online tutoring through several forums and web meetings. This project is supported by the Italian Ministry of Education, Research and University, MIUR, and is aimed at innovation in the high school. Over 2000 math and science teachers and 12000 high school students currently use Maple T.A. The presentation will also briefly discuss the use of Maple T.A., integrated with Moodle, as a preparatory and self-evaluation tool in science and math courses in the University.

Marina Marchisio is professor of Geometry at the Department of Mathematics at the University of Turin. She also does research in e-learning, particularly the role of integrated platforms in learning scientific subjects. From 2012 she is responsible for the project “Problem Posing and Solving” of the Italian Ministry of Education, Research and University whose principal aim is innovation in the learning of Mathematics in high school.

Alice Barana graduated in Mathematics at the University of Turin in April 2014. She holds a grant, funded by the Academy of Science of Turin, for the research project: “E-learning: the role of platforms integrated with Advanced Computational Environments and online tutoring systems in learning scientific subjects and in the fight against non-completion of school”. In particular she is interested in automatic assessment. She holds several training courses for teachers to introduce the use of Maple T.A. as an evaluation tool in their classes.
User Presentation

William Rybolt, Associate Professor, Babson College

Lessons Learned from Ten Years of Dynamic On-Line Quizzes: Recommendations for the Future

Against the background of issuing laptops running Windows to all freshmen joining the Babson College, the staff started developing a series of randomly generated internet based quizzes. The purpose of the quizzes, which focused on key topics presented in class, was to make students more aware of material that they were expected to master. These quizzes allowed the college to monitor student progress and identify topic areas that needed more focus. This presentation will illustrate some of the quizzes and describe the variations in the methods they were administrated in. The results of investigations into the relationship between quiz grades and course performance will be presented. These quizzes were developed and administered using EDU, a predecessor to Maple T.A. The presentation will conclude by describing the experience of transitioning to Maple T.A., illustrating several of what are considered to be second-generation questions made possible by the use of Maple T.A.

Keynote User Presentation

Prof. Jack Weiner, Professor Emeritus, University of Guelph

Socrates + Maple T.A. + Maple + Inquiry Based Learning: Seamless ‘Integration’ of Technology and Traditional Teaching in Calculus

Jack, a professor at the University of Guelph, spent several years integrating Maple and Maple T.A. into classes ranging in size from 12 to 600. He combined the best of technology with the best of traditional teaching. In this talk, he will give examples from Maple T.A. and Maple, together with proven teaching strategies that have energized his classroom and led to impressive grades. Some of these examples will surprise and delight!

Jack Weiner is Professor Emeritus at the University of Guelph, in Guelph, Ontario (Canada). He has over 30 years of experience teaching mathematics, and has won both the University of Guelph’s Professorial Teaching Award and the prestigious Ontario Confederation of University Faculty Associations Teaching Award. In an annual Canada-wide university survey conducted by Maclean’s magazine, he has been listed as a “Popular Professor” eight years out of nine. Jack has been using Maple for teaching, writing and recreation for over 10 years.

Keynote User Presentation

Prof. Felix Breitenecker, Professor, Andreas Koerner and Stefanie Winkler, Scientific Staff, Vienna University of Technology

Maple T.A. in Mathematical Education of Engineers in Austria

This presentation will illustrate the use of Maple T.A. at Vienna University of Technology. Using Maple T.A., the university was able to introduce a refresher course that trained students from different backgrounds and levels of knowledge enabling them to reach the same level within three semesters. It also played a critical role in teaching advanced math courses in a shorter period of time. The use of Maple T.A. also influenced the structure of the course, leading to better student understanding of technical subjects.

Keynote User Presentation

Prof. Dr. Thomas Schramm, Professor, HafenCity Universität Hamburg

A Nationwide Bridge Course in Mathematics for the Preparation of STEM Study Courses. Hamburg’s View and the Role of E-assessment

The largest obstacle for STEM students in their first year is obviously their lack of basic mathematical skills. We introduced the COSH standard of mathematical competencies developed in Baden-Württemberg used by more than 10 German universities for a common online preparatory course. Since the inbuilt diagnostics is too monolithic for use in schools we propose to use Maple T.A. for flexible formative E-assessments.

Tom Schramm has a background in theoretical astrophysics and computational science. He has been a full professor of physics, math and computer science at the Hamburg University of Applied Science and since 2006 at the HafenCity University of Hamburg. He has used Maple and Maple T.A. for more than a decade in his own lectures and examinations as well as for school projects.
Maplesoft Presentations:

**Maplesoft's Education Vision - Maple, Maple T.A. & The Möbius Project**

Jim Cooper, President and CEO, Maplesoft

From the slide rule to mobile phones and beyond, technology changes how and what we teach. Educators learn to adapt, and then ultimately thrive, in their new environment. This presentation will discuss how Maplesoft is enabling educators to meet significant challenges inherent in today’s technology through new products and online education solutions. It will cover important trends in education, where things are going from here, and what all this means for educators, students, and companies like Maplesoft.

*Jim Cooper has successfully built Maplesoft into the world’s premier advanced mathematics, modeling and simulation software provider. He is responsible for the company’s financial performance, and oversees all aspects of the company’s operations, including strategic business planning, product direction as well as sales and marketing. Jim brings over 20 years of experience in corporate management of advanced technology business ventures to his role as President and CEO.*

**Content Creation and Maple T.A.**

Louise Krmpotic, Director, Content Authoring, Maplesoft

Content is an extremely important piece for all Maplesoft products. This session will discuss the role of the content team, an overview of the content that is currently available for Maple T.A., and how you can get involved.

*Louise Krmpotic earned her Bachelor of Mathematics and Masters of Mathematics from the University of Waterloo, Canada. She also holds a Bachelor of Education from Althouse College, the Faculty of Education at the University of Western Ontario in London, Ontario. At Maplesoft, Louise has been responsible for several key initiatives, from product development to training and content development. She currently oversees key relationships with higher-education publishers and is responsible for finding and developing new business opportunities.*

**What's New in Maple T.A. 10**

Jonny Zivku, Product Manager, Maple T.A.

This presentation will explore and illustrate new features in Maple T.A. 10. This will include demonstrations of the new graph sketching and free body diagram question types, scoring rubrics, custom roles, and more. You will also have the opportunity to see how the new java-free components look and feel in Maple T.A. now. To top it off, it will also explore the new streamlined interface that has been revamped for Maple T.A. 10 and is fully supported on mobile devices.

*Jonny Zivku earned his BMath in Combinatorics & Optimization and Pure Mathematics from the University of Waterloo. He has been with Maplesoft since 2009 and is currently the Product Manager of Maple T.A. His previous roles included working with the Technical Support team, the Quality Assurance team, and the Project Management team.*

**The Future of Testing and Assessment**

Paul DeMarco, Product Director, Maplesoft

This talk will look at trends and goals of testing and assessment. The focus will be on practical solutions that can be realized in the near future inside a system like Maple T.A.

*Paul DeMarco holds a B.Math degree in Computer Science/Electrical Engineering Electives, from the University of Waterloo. As Director of Development at Maplesoft, Paul is involved in the technical direction of Maple and Maple T.A., with special focus on kernel development, grid and web technologies, and internal infrastructure. As a software developer at Maplesoft since 1996, Paul has been involved in all aspects of development, in particular matrix and polynomial data-structures, algorithms, and connectivity with other products and languages.*

**Maple T.A.: Adaptive Questions and Assignments**

Carl Hickman, Senior Developer, Maplesoft

This talk will explore Maple T.A.’s capabilities in creating and delivering questions and assignments that can adapt and tailor themselves to the student’s ability level.

*Carl Hickman holds a Ph.D. degree in Mathematics from Dalhousie University in Halifax, Canada. He has taught at the university level and has been with Maplesoft since 2007. He is currently a senior developer on the Maple T.A. team.*