

Enriching 21st century higher education students' job creation skill : UTM academic staff perceptions toward MIT BLOSSOMS

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Learning International Network Consortium (LINC) 2013
16-19 June 2013
Cambridge, MIT

Problem Statement

What are some **skills**
required for **jobs** by
future **employers**?

Problem Statement

ICTLHE in conjunction with RCEE & RHEd which was held in Malaysia in 2012.

Resolutions based on discussions among key industry players and academicians include:

- Graduates must be able to create new jobs and create companies with new innovations.
- Graduates find it hard to communicate, unable to interact with colleagues and people, fail to display team spirit and face difficulties in adapting to the job market.
- Students are unable to relate and apply what they learn in classroom into real world application. Initiatives should therefore reduce the gap between classroom and real working environment.

Problem Statement

Based on a survey, **Malaysian Soft Skills Scale** (My3S), generic skills or graduate student attributes that require serious attention in Malaysian universities include :

Communication skill - English as a second language

Team working skill - interaction and networking

Critical & problem solving skills - innovative

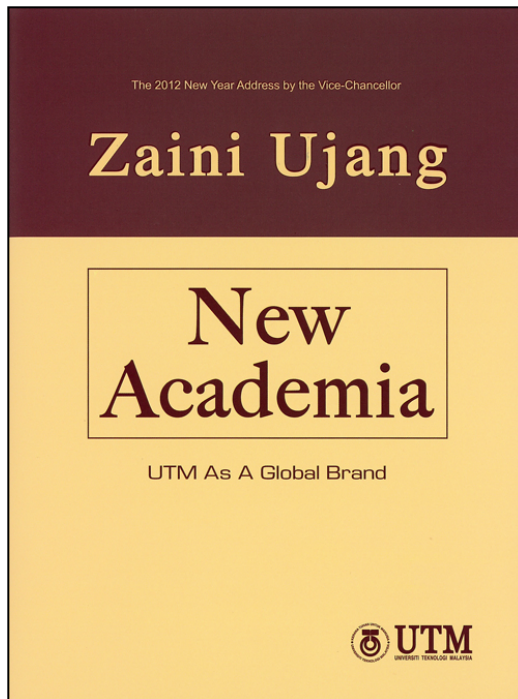
Entrepreneurial skill - job creation

Problem Statement

- What are some **characteristics of 21st century** higher education students?
- In the last few decades there has been a **gradual shift of understanding** about **how learning** should be facilitated in higher education.
- **Emphasis** on **Student Centred Learning** (SCL) rather than Teacher Centered Learning.
- By year **2015**, all **Malaysian academic staff** are required to use in their teaching and learning activities **at least 1 SCL method** such as case studies and problem-based learning (**National Higher Education Strategic Plan**).

A Solution

UTM NEW ACADEMIA LEARNING INNOVATION MODEL

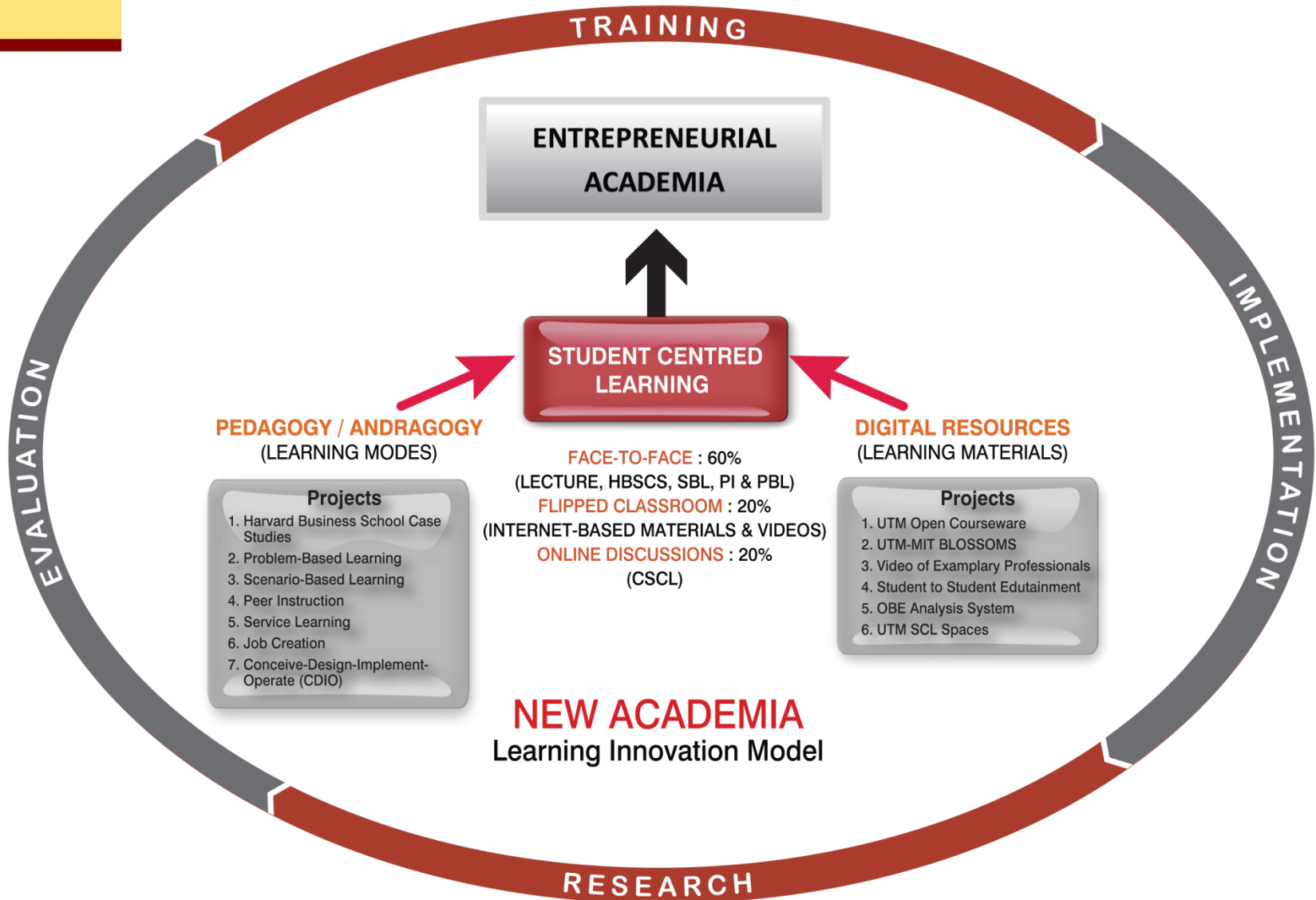


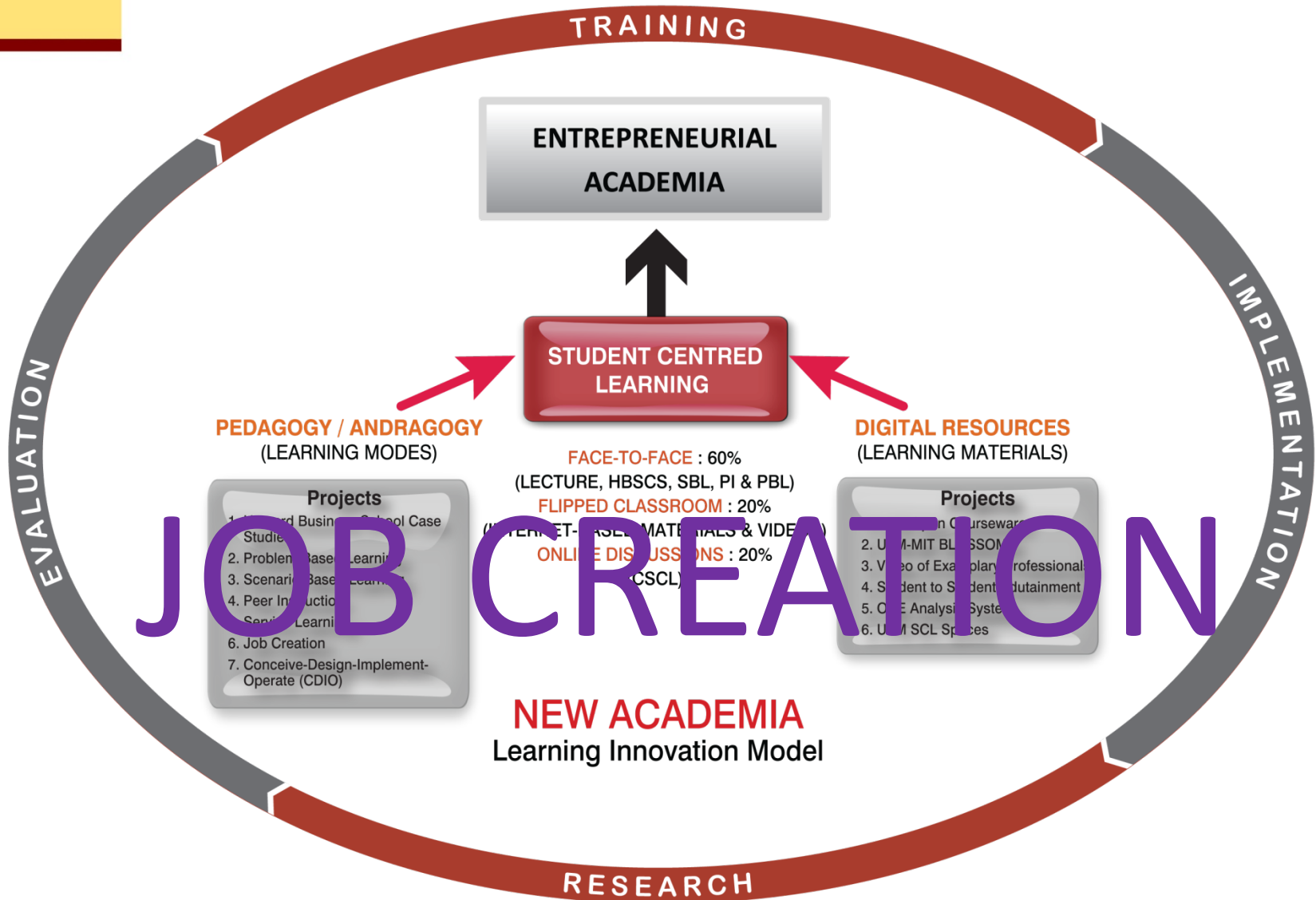
Developed in **2012**.

Brain child of Zaini Ujang (Secretary General II of the Malaysian MOE and Past VC of UTM).

Task Force was formed under Rose Alinda Alias who is UTM DVC (Academic & Internationalization) and **Champion**.

To materialize UTM New Academia Learning Innovation initiative, Baharuddin Aris (UTM Director for Teaching and Learning) as the **Task Force Leader**.





How 21st century higher education Student Learn

Team-Oriented: . Generation Y is loyal, committed and wants to be included and involved. They **value teamwork** and seek the input and affirmation of others

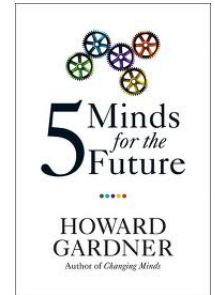
Attention-Craving: Generation Y **craves attention** in the forms of **feedback and guidance**. Generation Y may benefit greatly from **mentors** who can help guide and develop them.

How 21st century higher education Student Learn

5 Minds for the Future

Howard Gardner (<http://howardgardner.com/>)

Harvard Graduate School of Education



The Disciplined Mind – applying diligently, improving steadily and continuing beyond formal education.

The Synthesizing Mind – selecting crucial information from the copious of information available and arraying that information so as to make sense to self and others.

The Creating Mind – going beyond existing knowledge and syntheses to pose new questions and offer new solutions.

The Respectful Mind – responding sympathetically to differences among individuals and groups, and extending beyond mere tolerance.

The Ethical Mind – striving toward good work and good citizenship.

MIT-BLOSSOMS video (embed with critical and thinking skills)

- Information and Communication Technology (ICT) can be used to **extend conventional teaching methods**.
- Higher Education Institutions need to **tap the potential** and advantage of ICT towards **engaging and enriching** 21st century higher education students learning experiences.
- Will the use of MIT-BLOSSOMS **interactive video** (embed into it critical and thinking) equip students with **job creation** skills?

Research Purpose

To **explore** the **perceptions** of UTM academic staff
towards the **use** of an
interactive learning environment
MIT BLOSSOMS
in **enriching 21st century higher education students'**
entrepreneurial skill specifically on **job creation**.

Research Methodology

12 **UTM academic staff** volunteered to view an interactive video lesson from the MIT BLOSSOMS web site.

MIT BLOSSOMS

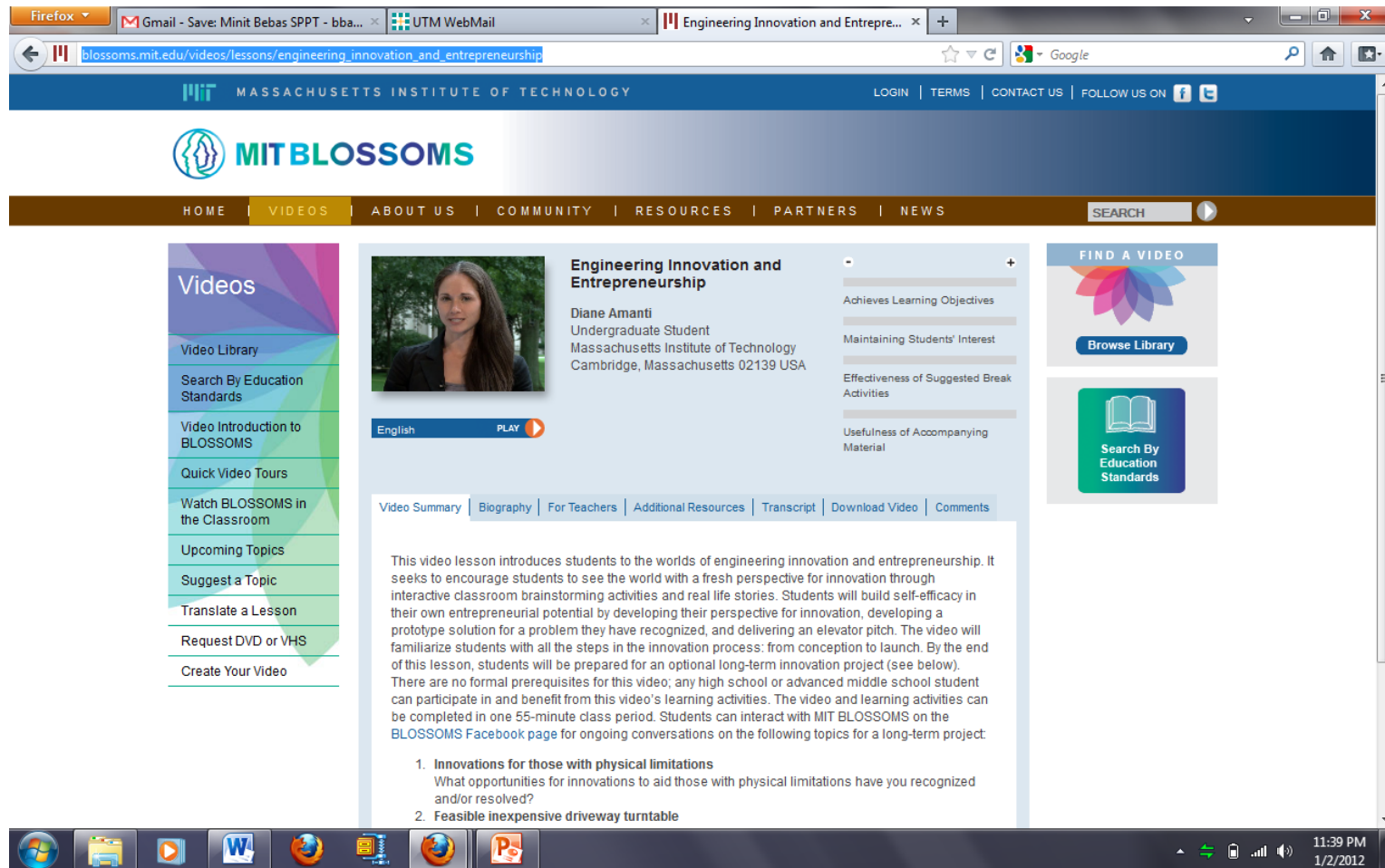
Blended Learning Open Source Science or Math Studies

<http://blossoms.mit.edu/>



MIT BLOSSOMS

http://blossoms.mit.edu/videos/lessons/engineering_innovation_and_entrepreneurship



The screenshot shows a web browser window displaying the MIT BLOSSOMS website. The browser tabs include 'Gmail - Save: Minit Bebas SPPT - bba...', 'UTM WebMail', and 'Engineering Innovation and Entrepre...'. The address bar shows the URL 'blossoms.mit.edu/videos/lessons/engineering_innovation_and_entrepreneurship'. The website header features the MIT logo and 'MASSACHUSETTS INSTITUTE OF TECHNOLOGY' with navigation links for 'LOGIN', 'TERMS', 'CONTACT US', and 'FOLLOW US ON' (Facebook and Twitter). The main navigation bar includes 'HOME', 'VIDEOS', 'ABOUT US', 'COMMUNITY', 'RESOURCES', 'PARTNERS', and 'NEWS', along with a search bar. The 'VIDEOS' section is active, displaying a video player for 'Engineering Innovation and Entrepreneurship' by Diane Amanti, an Undergraduate Student at MIT. The video player includes a 'PLAY' button and a 'Language' dropdown set to 'English'. To the right of the video player are several progress indicators for learning objectives: 'Achieves Learning Objectives', 'Maintaining Students' Interest', 'Effectiveness of Suggested Break Activities', and 'Usefulness of Accompanying Material'. Below the video player are tabs for 'Video Summary', 'Biography', 'For Teachers', 'Additional Resources', 'Transcript', 'Download Video', and 'Comments'. The 'Video Summary' tab is selected, showing a paragraph of text and a list of two topics: '1. Innovations for those with physical limitations' and '2. Feasible inexpensive driveway turntable'. To the right of the video player is a 'FIND A VIDEO' section with a 'Browse Library' button and a 'Search By Education Standards' button. The Windows taskbar at the bottom shows various application icons and the system clock indicating 11:39 PM on 1/2/2012.

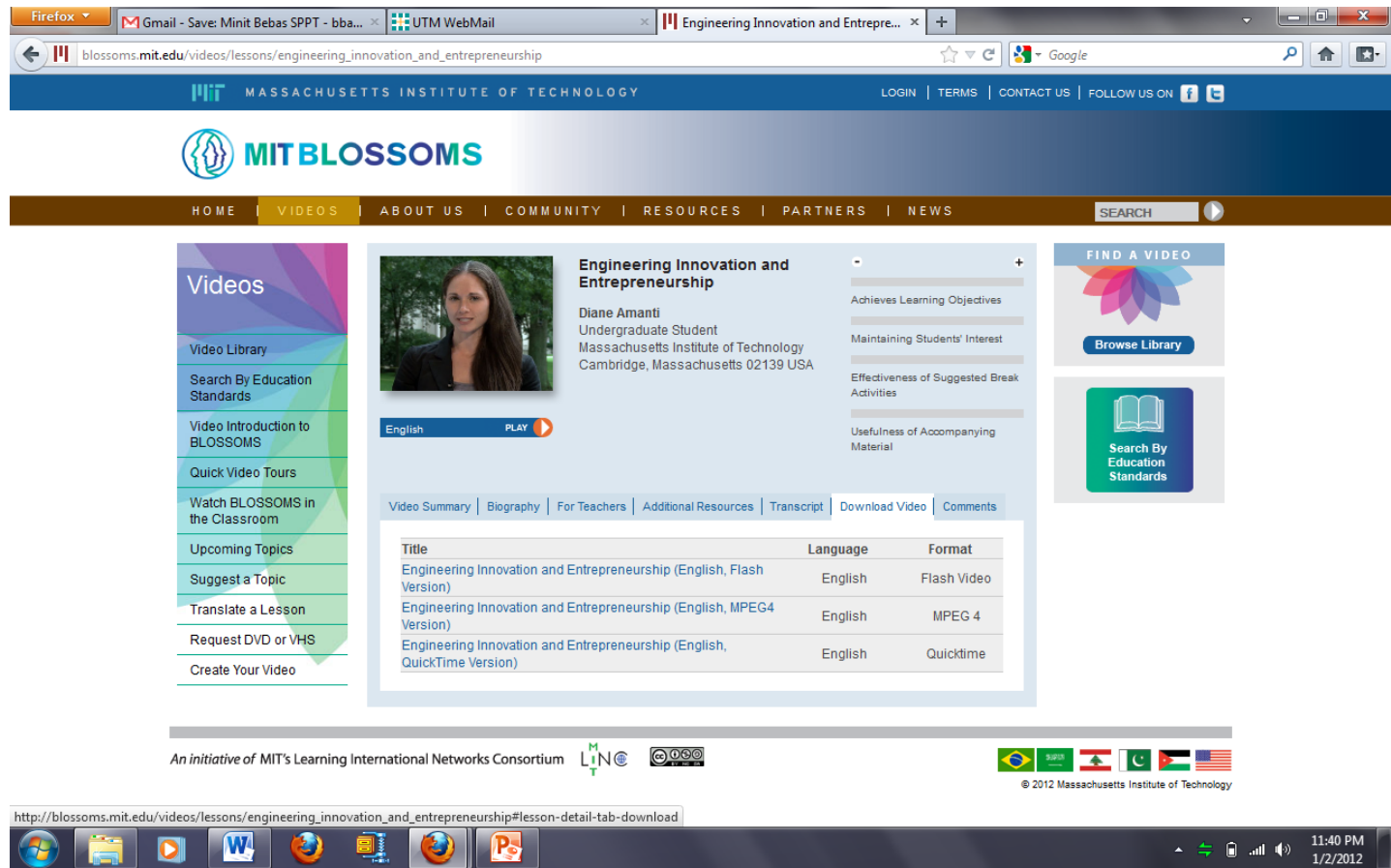
SAMPLE VIDEO

MIT BLOSSOMS [Video](#) on
Engineering Innovation and Entrepreneurship
(3 minutes)

MIT BLOSSOMS

http://blossoms.mit.edu/videos/lessons/engineering_innovation_and_entrepreneurship

The video can be downloaded as follows:



The screenshot shows the MIT Blossoms website interface. The main content area displays the video 'Engineering Innovation and Entrepreneurship' by Diane Amanti, an Undergraduate Student at MIT. Below the video player, there are tabs for 'Video Summary', 'Biography', 'For Teachers', 'Additional Resources', 'Transcript', 'Download Video', and 'Comments'. The 'Download Video' tab is active, showing a table of download options:

Title	Language	Format
Engineering Innovation and Entrepreneurship (English, Flash Version)	English	Flash Video
Engineering Innovation and Entrepreneurship (English, MPEG4 Version)	English	MPEG 4
Engineering Innovation and Entrepreneurship (English, QuickTime Version)	English	Quicktime

At the bottom of the page, there is a footer with the text 'An initiative of MIT's Learning International Networks Consortium' and various international flags. The copyright notice reads '© 2012 Massachusetts Institute of Technology'.

Research Methodology

Interviewed how 12 UTM academic staff **perceived** the video lesson will be able to help enrich entrepreneurial skill specifically on job creation among higher education students.

Research Findings

Specific findings include **5 criteria**:

1. Content

All the academic staff agreed that the content in the MIT-BLOSSOMS video lesson is suitable to enrich entrepreneurial skill specifically on job creation among students. The content is systematically planned and well-structured.

Academic staff A8 expresses:

The contents were stimulating. Enough concepts were included in the video lesson that makes the lesson clear. Also, the developments of the concepts were very clear and systematic. Overall, I personally think the MIT-BLOSSOMS video lesson did improve my knowledge on systematic steps towards being an innovator, job creator and entrepreneur. If it works for me, I am confident that it will work for UTM students.

Research Findings

Specific findings include **5 criteria**:

2. *Flexible delivery*

All the academic staff perceived that the structure of the MIT-BLOSSOMS video lesson is user-friendly since it allowed them to move freely and can repeat the same lesson as many times as they wanted. Digital technologies have the potential to support and shape a pedagogy which is more active, participatory, personalized, flexible, and inclusive .

Research Findings

Specific findings include **5 criteria**:

3. *Individual pace*

All the academic staff agreed that the MIT-BLOSSOMS video lesson allows users to work at their own pace. The learner can actively participates in the construction of knowledge through situated and authentic tasks on individual basis to support deep, rather than surface, learning (Lai, 2008).

Academic staff A12 reacts:

After using the MIT-BLOSSOMS video lesson, I feel like wanting to get more of such videos lessons.

Research Findings

Specific findings include **5 criteria**:

4. *Team working*

All the academic staff agreed that the MIT-BLOSSOMS video lesson can help promote students to work in groups and produce a project that can be executed by a group of students. This MIT-BLOSSOMS video lesson can also encourages and improves discussion, interaction and collaboration among students.

Research Findings

Specific findings include **5 criteria**:

5. *Availability of computer*

There was a word of caution among the participants. They said that students will be unhappy with computer based learning if support is lacking. Instructor's support is also essential while students are using MIT-BLOSSOMS video lessons.

Academic staff A3 confesses:

I thought I would get burned out in teaching, but now I am excited about teaching again. This time around, I will try to use computer and information technology. Thanks to the MIT-BLOSSOMS video lesson. It really helped me think, and give me ideas about what I can do in the classroom.

Conclusions and Limitations

All 12 UTM academic staff participated in the study were positive towards the use of MIT-BLOSSOMS in enhancing UTM 21st century higher education students' entrepreneurial skill specifically on job creation.

Blended learning can leverage the advantages of both F2F and digital teaching materials (Lou et al., 2011; Shih, 2011).

However, there are some limitations to this study that include:
Small sample size during the interview sessions.

Need to incorporate other strategies of data collection such as observations to observe how students approach learning.

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BLOSSOMS working with Universiti Teknologi Malaysia (UTM) to improve science and math education

Engineering Systems Division

September 22, 2011

today's news

Smarter robot arms



Image: Sertac Karaman

A combination of two algorithms developed at MIT allows autonomous robots to execute tasks much more efficiently — and move more predictably.

How to reverse general anesthesia

September 22, 2011

3 Questions: Faster than light?

September 23, 2011

Dyslexia independent of IQ

Share

MIT is working with Universiti Teknologi Malaysia (UTM) to provide programs to assist the Malaysian government in improving science and mathematics education — and make it more appealing and interesting to students.

[Blended Learning Open Source Science or Math \(BLOSSOMS\)](#), led by

Richard Larson, Mitsui Professor of Engineering Systems, is developing a BLOSSOMS center at UTM. UTM and MIT will make recommendations to the Malaysian government to create programs that would attract more students to study science and mathematics. UTM and MIT are also in discussions to organize a summer camp at MIT next year — and at UTM the following year — involving students from around the world. More details are available in the UTM [press release](#).

Professor Larson is founding director of [Learning International Networks Consortium \(LINC\)](#), as well as founding director of the MIT Center for Engineering Systems Fundamentals.



Richard Larson presents a lecture at Universiti Teknologi Malaysia (UTM) on Sept. 20. Photo courtesy of Universiti Teknologi Malaysia (UTM)

related

BLOSSOMS

tags

education, teaching, academics

engineering systems

international relations and collaborations

students

**THANK YOU FOR YOUR
ATTENTION**

**For further information, contact:
Baharuddin Aris (bba@utm.my)**