KEMENTERIAN PENGAJIAN TINGGI

JPT JABATAN PENDIDIKAN TINGGI

REIMAGINE AND REDESIGN ONLINE LEARNING EXPERIENCE

ASSOC. PROF. DR. WAN ZUHAINIS SAAD

Director
Academic Excellence Division
Department of Higher Education
Ministry of Higher Education

FUTURE WORK SKILLS OF 2020:

LONGEVITY | SMART MACHINES | COMPUTATIONAL WORLD | NEW MEDIA ECOLOGY | SUPER STRUCTED ORGANIZATION | GLOBALLY CONNECTED

SENSE MAKING

ABILITY TO DETERMINE THE DEEPER MEANING OR SIGNIFICANCE OF WHAT IS BEING EXPRESSED

THE DRIVERS:

SOCIAL INTELLIGENCE

ABILITY TO CONNECT TO OTHERS IN A DEEP AND DIRECT WAY, TO SENSE AND STIMULATE REACTIONS AND DESIRED INTERACTIONS

THE DRIVERS:

NOVEL AND ADAPTIVE THINKING

PROFICIENCY AT THINKING AND COMING UP WITH SOLUTIONS AND RESPONSES BEHOND THAT WHICH IS ROTE OR RULE-BASED

THE DRIVERS:

CROSS CULTURAL COMPETENCY

ABILITY TO OPERATE IN DIFFERENT CULTURAL SETTINGS

THE DRIVERS:

COMPUTATIONAL THINKING

ABILITY TO TRANSLATE VAST AMOUNTS OF DATA INTO ABSTRACT CONCEPTS AND TO UNDERSTAND DATA BASED REASONING

THE DRIVERS:

NEW MEDIA LITERACY

ABILITY TO CRITICALLY ASSESS AND DEVELOP CONTENT THAT USES NEW MEDIA FORMS, AND TO LEVERAGE THESE MEDIA FOR PERSUASIVE COMMUNICATION

THE DRIVERS:

TRANSDISCIPLINARY

LITERACY IN AND ABILITY TO UNDERSTAND CONCEPTS ACROSS MULTIPLE DISCIPLINES

THE DRIVERS:

DESIGN MINDSET

ABILITY TO REPRESENT AND DEVELOP TASKS AND WORK PROCESSES FOR DESIRED OUTCOMES

THE DRIVERS:

COGNITIVE LOAD MANAGEMENT

ABILITY TO DISCRIMINATE AND FILTER INFORMATION FOR IMPORTANCE, AND TO UNDERSTAND HOW TO MAXIMIZE COGNITIVE FUNCTIONS

THE DRIVERS:

VIRTUAL COLLABORATION

ABILITY TO WORK PRODUCTIVELY, DRIVE ENGAGEMENT, AND DEMONSTRATE PRESENCE AS A MEMBER OF A VIRTUAL TEAM

THE DRIVERS:

Source:
cdn.theatlantic.com/static/front/docs/sponsored/phoenix/future_work_skills_2020.pdf

TALENT OF THE FUTURE

"Today's educators are preparing students for jobs that don't yet exist using technologies not yet invented to solve problems not yet identified."

— Rick Stephens, Senior Vice President, HR, Boeing 2008

Criteria of talents in the future

(learn, unlearn, re-learn, co-learn and co-create)

From **jobs** to **roles**

Job seekers to **Job creators**

2025: A Look Into the Future of Higher Education (Wiley Education Services, 2019)

FACULTY

NEW TEACHING MODEL
Team teaching, co-teaching, and teaching-only positions will be common

TECHNOLOGY SAVVY
They'll need to stay abreast and be comfortable with new instructional technologies and changes

MORE EFFICIENT GRADING
Better rubrics and automation will enable them to provide higher-quality feedback.

A MULTIDISCIPLINARY APPROACH
They'll straddle several disciplines to support applied learning and more adjuncts moving between fields.

STUDENT

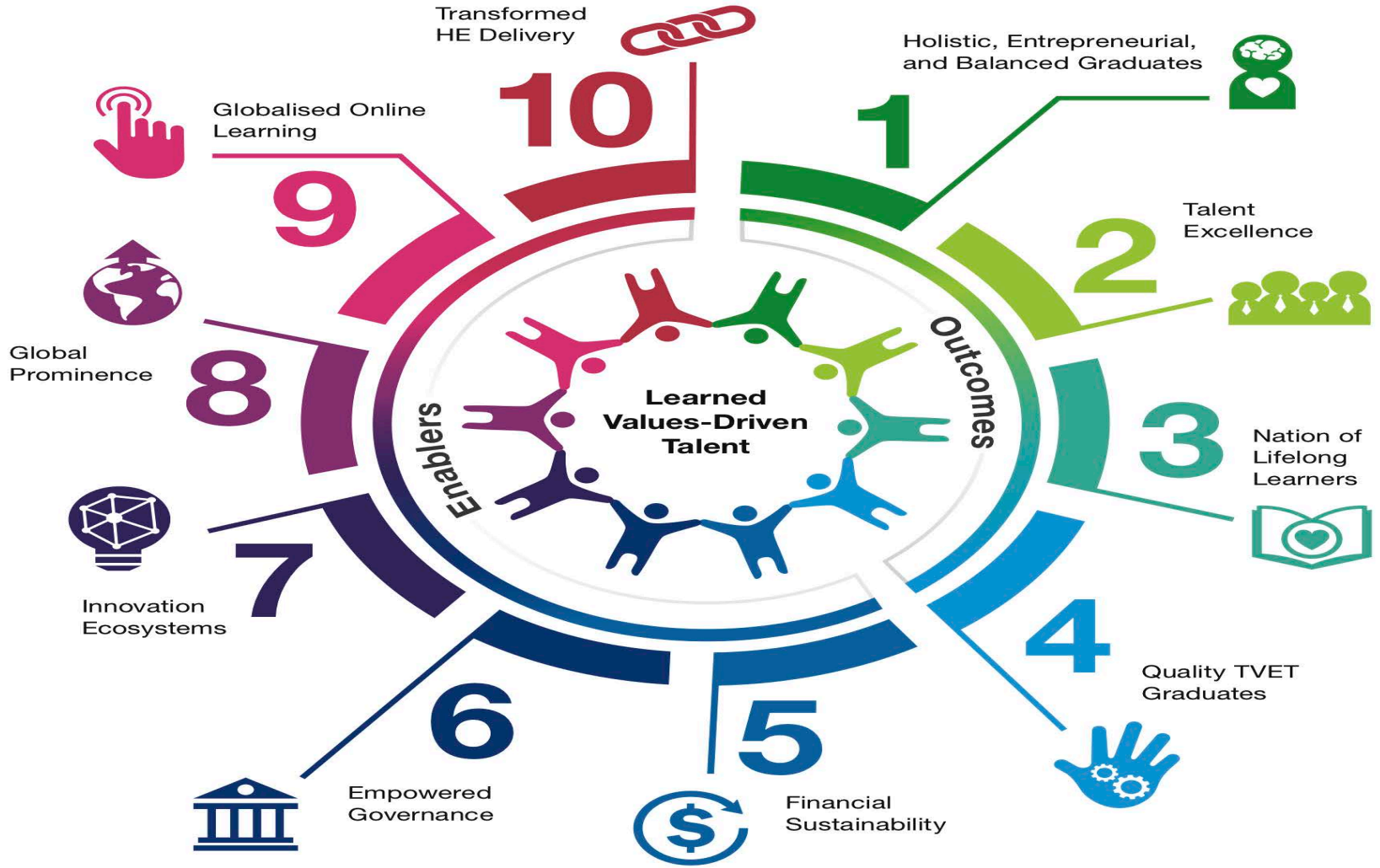
A DEMAND FOR ENGAGING EXPERIENCES
Expectation that learning will be entertaining, immersive, purpose-driven, and experiential.

TANGIBLE RESULTS
Increased focus on concrete skills that enable them to graduate with a job and facilitate career mobility.

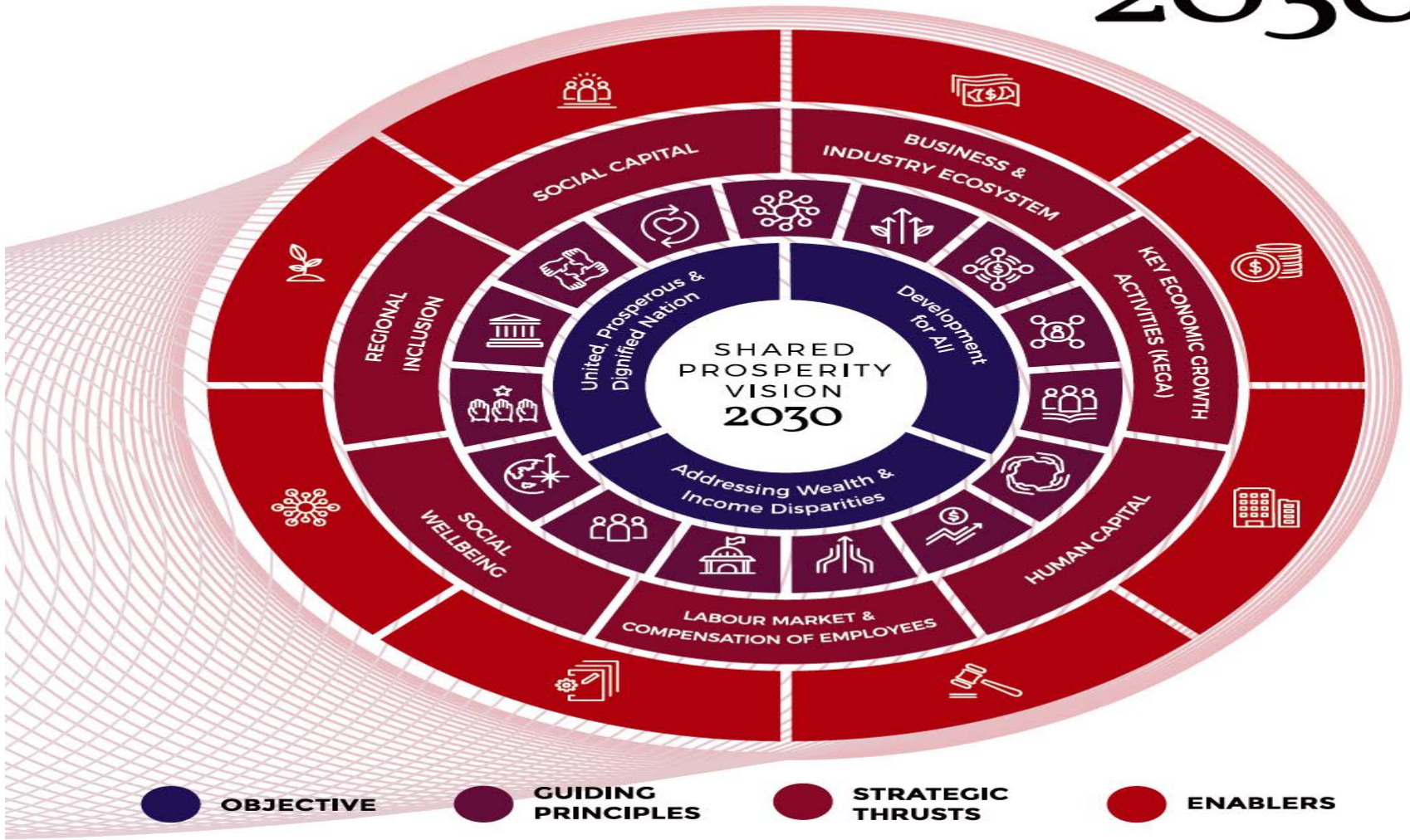
A CONSUMER MINDSET
They'll expect institutions to function like businesses, demanding convenience personalization and professional skills.

CHALLENGES IN THE CLASSROOM
They'll continue to need help with writing, critical thinking and professional skills

What are the 10 Shifts needed to transform the system?



FRAMEWORK OF SHARED PROSPERITY VISION 2030



EIGHT SHARED PROSPERITY VISION ENABLERS

Capabilities, resources and catalysts contributing to success of Shared Prosperity Vision

Financial Capital

Expansion of businesses through holistic and SME-friendly financing

Effective Institutional Delivery

Improvement in implementation of initiatives and outcome-based programmes

Fiscal Sustainability

Sustainable management of government finance to strengthen investors and market confidence

Governance & Integrity

Strengthening governance through transparency and accountability to foster trust of the rakyat

Education & TVET

Increase in skilled and highly-educated workforce, learning society and outcome-based education

Big Data

Policy making guided by data and empirical facts under a unified and integrated data system

Sustainability

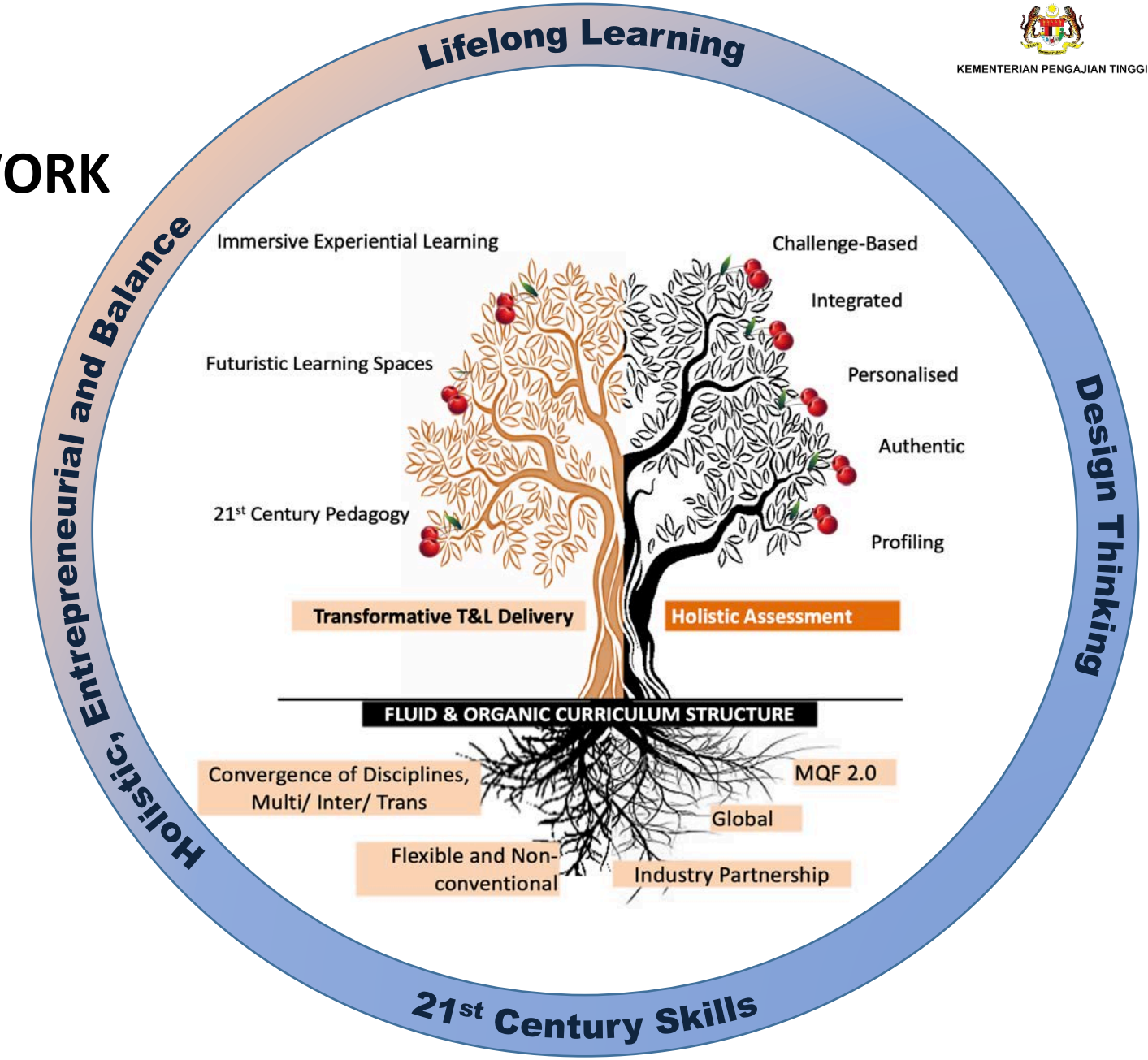
National development which is eco-friendly and gives emphasis to conserving and preserving natural resources

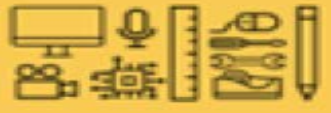
Enlightened Society

A lifelong learning culture through continuous learning, intellectual discourse, dialogues and awareness to enhance knowledge, experience sharing and empathy

Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all

FUTURE READY CURRICULUM FRAMEWORK - REVISED





THE MAKER MINDSET

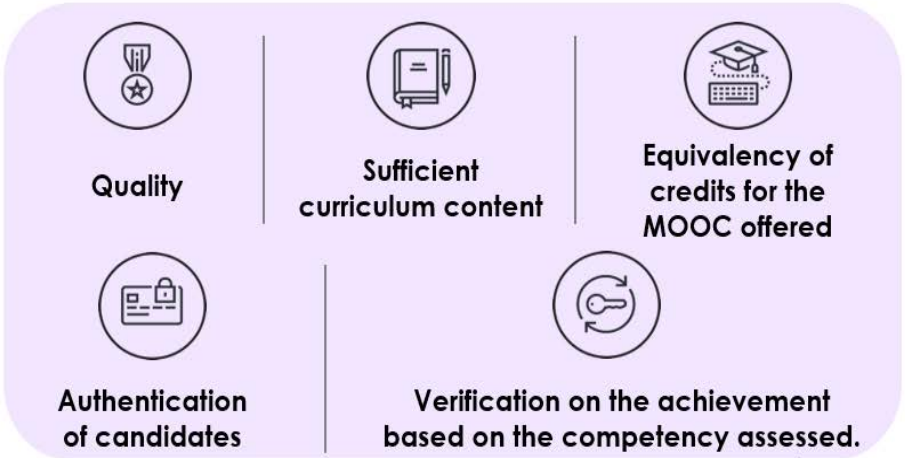
There was a time when you could follow the formula: work hard at school, go to college, and climb a corporate ladder. But because of the complex global economy, the creative economy, the information economy, **the ladder is now a maze**. Students need to be able to engage in iterative thinking, creative thinking, critical thinking. They need to know how to pivot, how to revise, how to persevere. They need to solve complex problems. All of those are involved in the maker mindset. If you can embed making in the curriculum, then they're able to develop that maker mindset. The space is just the platform that facilitates it.

John Spencer

Episode 96, The Cult of Pedagogy Podcast

CREDIT TRANSFER MOOC(CTM)

Kriteria utama untuk pelaksanan Pindahan Kredit MOOCs (CTM):



Universiti Malaysia PAHANG
Engineering • Technology • Creativity

1. Calculus
2. Programming Techniques

UTM
UNIVERSITI TEKNOLOGI MALAYSIA

1. Dynamics of Leadership
2. Research Methodology in Engineering
3. Instructional and Learning Technology
4. Application of Statistics in Educational Research
5. Highway Engineering
6. Data Structures and Algorithm
7. Web Programming
8. Mechanical and Electrical Works
9. Digital Electronics
10. Research Methods in Education

UTeM
UNIVERSITI TEKNIKAL MALAYSIA MELAKA

Mandarin 1

UniSZA
UNIVERSITI SULTAN ZAINAL ABIDIN

Agricultural Entrepreneurship

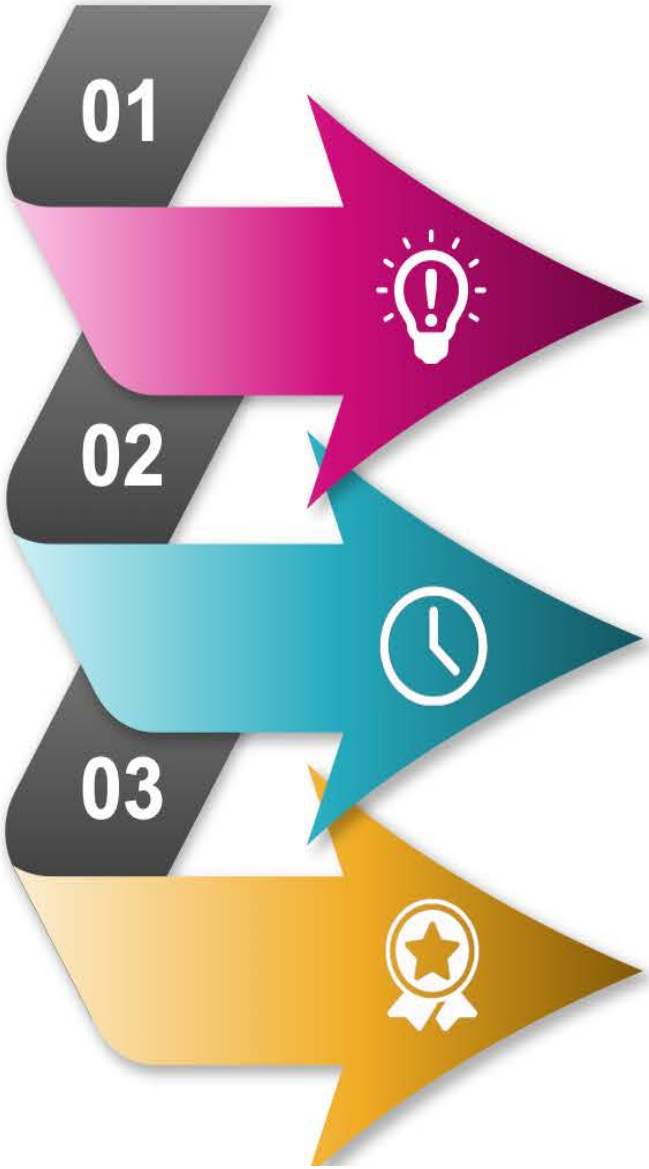
UNIMAS
UNIVERSITI MALAYSIA SARAWAK

ICT Competency (For All)

Universiti Pendidikan Sultan Idris
SULTAN IDRIS EDUCATION UNIVERSITY

UPM
UNIVERSITI PUTRA MALAYSIA

MICRO-CREDENTIALS



MICRO-CREDENTIALS

Focus on much smaller modules of learning than those covered in conventional academic awards

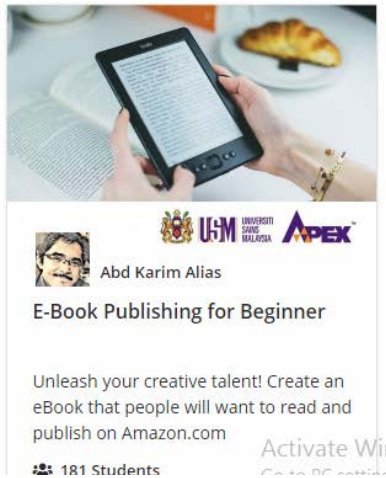
PERIOD

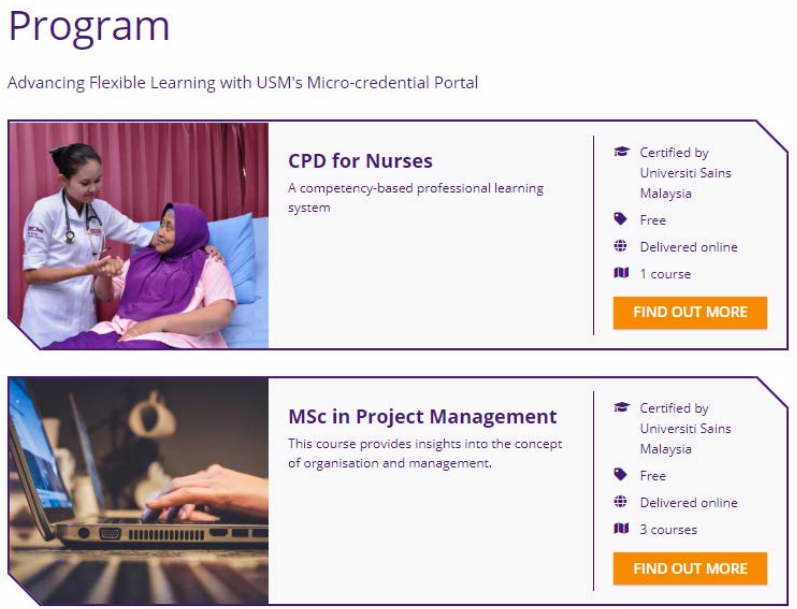
Allow learners to complete the required work over a shorter period

CERTIFICATIONS

'nano-degrees', 'micro-masters credentials', 'certificates', 'badges', 'licenses' and 'endorsements'

SNAPSHOT - MICRO-CREDENTIAL USM





Course Categories

SOURCE: UNIVERSITI SAINS MALAYSIA

MICRO-CREDENTIAL

LEARN ON DEMAND

The concept of learning just-in-time, just enough and just-for-me (personalised).

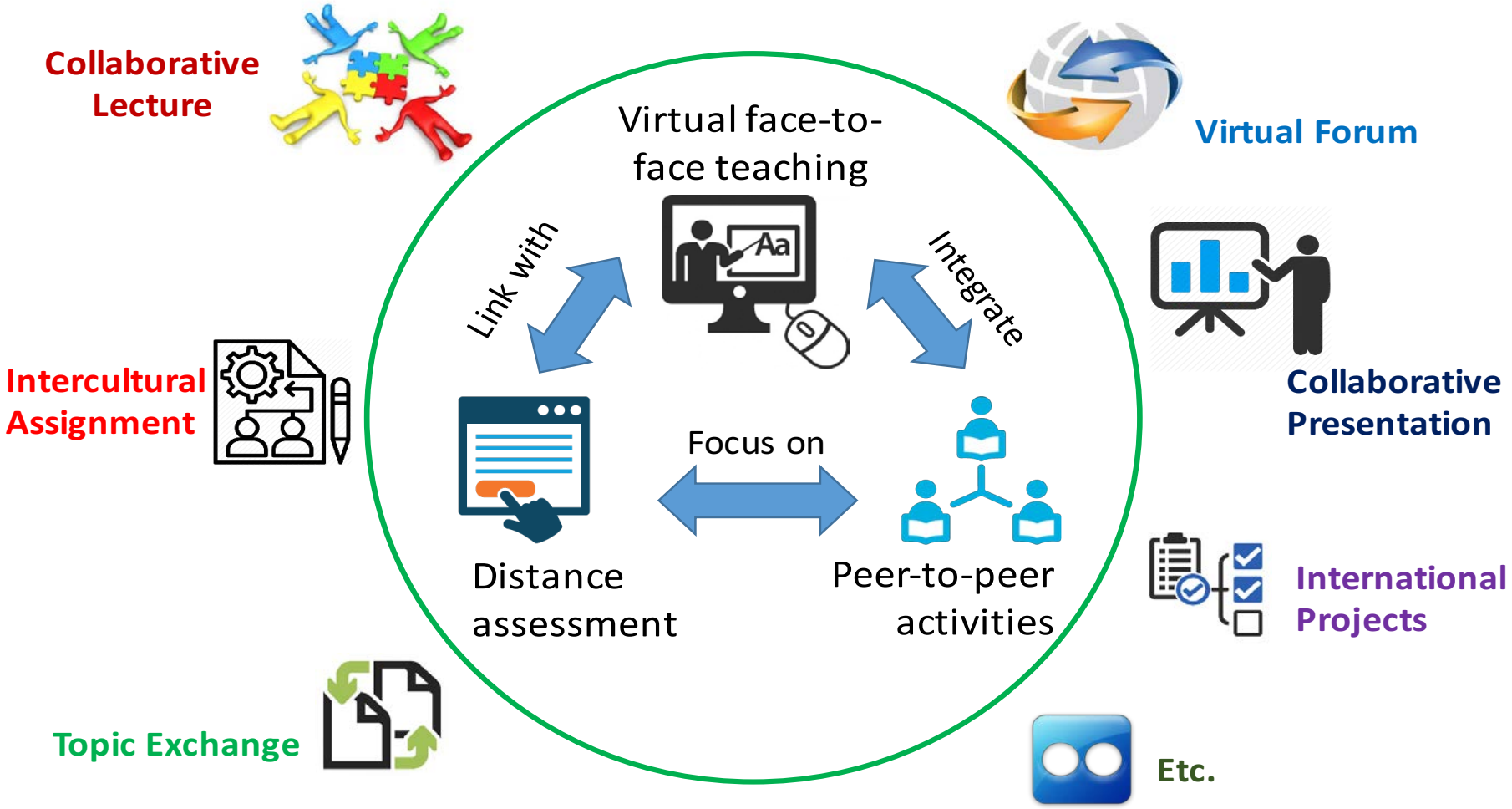
Learn in bite-size module and earn the digital badge

Collect your digital badges, bundle them and get a higher qualification.

https://learning4life.usm.my/

SOURCE: UNIVERSITI SAINS MALAYSIA

Global Classroom – Actively Engaged and Immersed



SOURCE:

Universiti Malaysia PAHANG
Engineering • Technology • Creativity

All types of learning activities are possible to be collaboratively conducted with international prominent figures

https://www.menti.com/ogr9qddzuz

UNUSUAL

U - UNIQUE
N - NOBLE
U - UTTERMOST
S - SPECTACULAR
U - ULTIMATE
A - AWESOME
L - LEARNERS

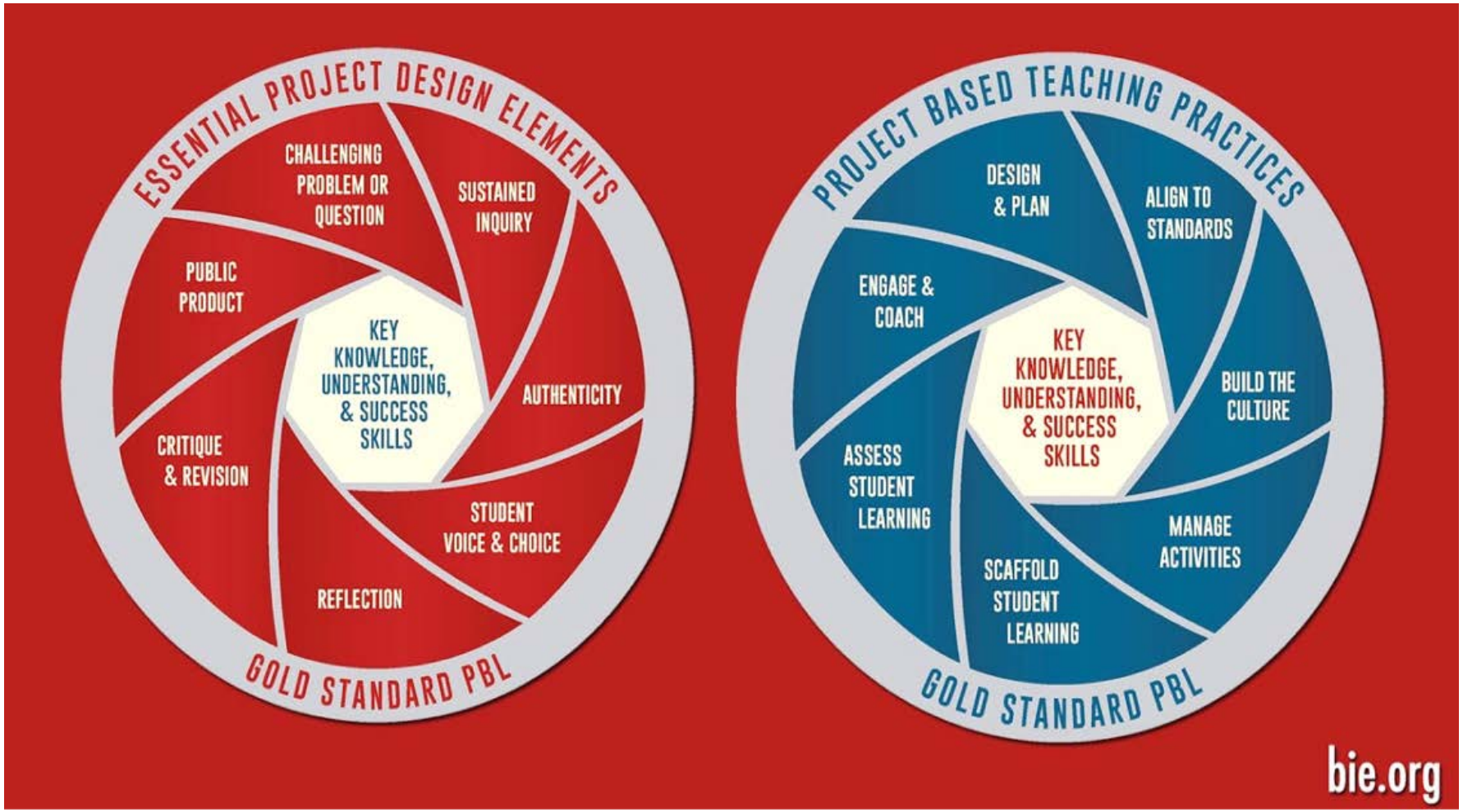
How to guide our students to be UNUSUAL

U- UPLIFT
N- NURTURE
U- UPSKILL
S- SUPPORT
U- UNLEASH
A- ACTIVATE
L- LIBERATE

TRANSFORM

REDESIGN & REIMAGINEERING LEARNING

PROJECT BASED LEARNING



9

Fundamental Digital Skills for 21st Century Teachers

Record and edit audio clips

1- Soundcloud.com
2- Audioboom.com
3- Vocaroo.com
4- Clyp.it

Create interactive video content

1- Youtube Video Editor
2- Wevideo.com
3- Magisgto.com
4- Animoto.com

Create infographics and posters

1- Piktochart.com
2- Canva.com
3- Drawings.google.com
4- Thinglink.com

Create PLNs, connect , discover new content, and grow professionally

1- Twitter.com
2- Facebook.com
3- Plus.google.com
4- Linkedin.com

Use blogs and wikis to create participatory spaces for students

1- Blogger.com
2- Wordpress.com
3- Edublogs.org
4- wikispaces.com

Create engaging presentations

1- Docs.google.com/presentation
2- Haikudeck.com
3- Zoho.com/docs/show.html
4- Prezi.com

Create digital portfolios

1- Web.seesaw.me
2- Silk.co
3- Sites.google.com
4- Weebly.com

Curate, organize and share digital resources

1- Diigo.com
2- Scoop.it
3- Educlipper.net
4- Edshelf.com

Create digital quizzes

1- Flipquiz.me
2- Riddle.com
3- Quizalize.com
4- Testmoz.com

www.educatorstechnology.com

EMPOWERING LEARNERS WITH POBL FOR EXPERIENTIAL LEARNING

- GAMIFICATION
- E-PORTFOLIO
- REFLECTIVE JOURNAL
- NATIONAL AND INTERNATIONAL COMPETITIONS
- NEWSLETTER OF MICROBES IN RESEARCH WITH AR
- DIGITAL STORYTELLING
- DOCUMENTARY INCLUDING INTERVIEW WITH EXPERTS
- DIGITAL SCRAPBOOK
- MIND MAPPING
- 3D PRINTING
- FLIPPED CLASSROOM MATERIALS
- MINIC

- GLOBALIZED COLLABORATIVE LEARNING
- VIRTUAL MICROBES
- THE AWESOME MICROBES CARNIVAL
- LIFE WITHOUT MICROBES
- MICROBES AND US
- MICROBES COMICS
- THINGLINK ON THE GO WITH INTERVIEW
- ADOPT A MICROBE
- 3MT (3-Minute-Talk)
- PECHA KUCHA MICROBES
- THANK A MICROBE
- AUGMENTED REALITY
- MICROBES IN RESEARCH
- MUSYM2017

10 CRITICAL SKILLS YOU'LL NEED TO SUCCEED AT WORK IN 2020

1. SENSE MAKING
2. SOCIAL INTELLIGENCE
3. NOVEL AND ADAPTIVE THINKING
4. CROSS CULTURAL COMPETENCY
5. COMPUTATIONAL THINKING
6. NEW MEDIA LITERACY
7. TRANS DISCIPLINARY
8. DESIGN MINDSET
9. COGNITIVE LOAD MANAGEMENT
10. VIRTUAL COLLABORATION

Presented by:
WordStream
@larrykim

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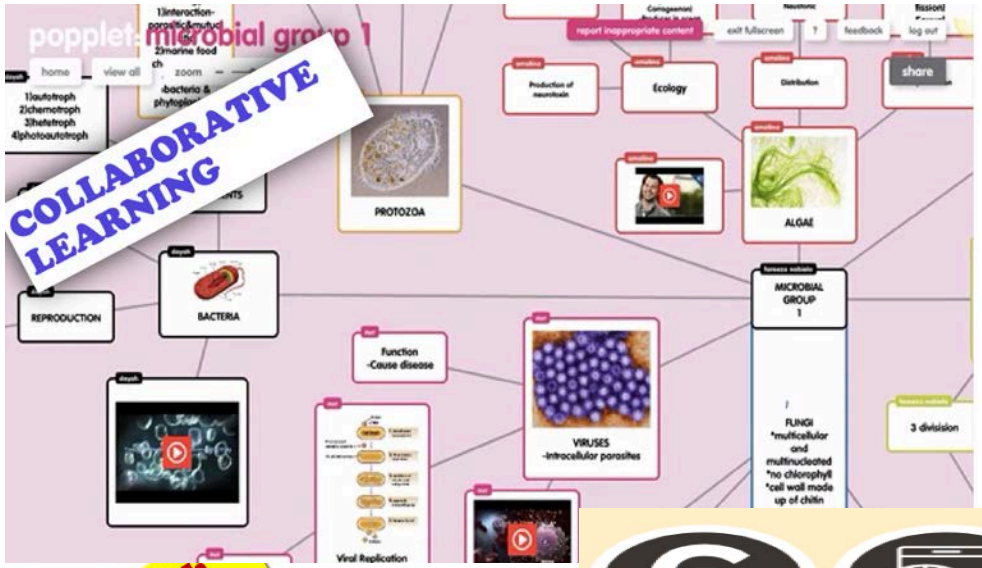
COLLABORATIVE LEARNING
microbial group 1
PROTOZOA
ALGAE
BACTERIA
REPRODUCTION
VIRUSES
-Intracellular parasites
MICROBIAL GROUP 1
FUNGI
Function
-Cause disease
Ecology
share

20 SLIDES
ALL ARE WELCOME!!
PECHA KUCHA MICROBES
@ BIOTECH
12.15-12.45 MONDAYS &
12.00-12.30 FRIDAYS
DKU BIOTECH1
22/4 - 3 JUNE 2016
Department of Microbiology
Faculty of Biotechnology and Biomolecular Sciences
Universiti Putra Malaysia
20 IMAGES

THANK A MICROBE with Augmented Reality
6
NEW MEDIA LITERACY
Bacillus megaterium
THE BIG BEAST
IMPACT

28/05/2013

5
COMPUTATIONAL THINKING

Replica of Bob-Squid interacting with bioluminescence bacteria

Microbiology@BioTech

MINIC 2018

MICROBES INVENTION, INNOVATION & IDEATION CHALLENGE 2018

Identify a problem in any application

Must be supported by documents

a microbe or microbes
solution to that problem

be supported by scientific journals

Develop an A1 poster and a prototype to present your solution

9 COGNITIVE LOAD MANAGEMENT

SCIENCE AS ART

INTELLECTUAL PROPERTY CORPORATION OF MALAYSIA
An agency under the Ministry of Domestic Trade, Co-Operatives and Consumerism
COPYRIGHT ACT 1987
NOTIFICATION OF WORKS
(subregulation 32(2) and 5(3))

CR - 1

Application No : AR2018001981
Perbadanan Harta Intelek Malaysia
04/05/2018

Applicant : ☑ Owner ☐ Author ☐ Licensee

Title of work (Original language) : Leptorinth
Translation :
Transliteration :
Name of the Language (*Language that been used in the work) : English
If published in a periodical or serial (Literary Work) : (Volume / Number) (Issue Date) (On Pages)

Section A : Type of Works
☐ Literary ☐ Musical ☐ Sound Recording ☑ Artistic ☐ Film ☐ Broadcast
Date of Fixation / First Published / Erected / Incorporated / Broadcasted : 25 / 09 / 17

Section B : Publication
The Work is : ☑ Published ☐ Unpublished
If published : 2017 (Year of Compilation) 25 / 09 / 17 (Date of first publication) Malaysia (Country)

(If author is "same as owner" go to Part D - if more than one addresses of all the author)
Name : as attached

IUCEL 2017
INTERNATIONAL UNIVERSITY CARNIVAL ON E-LEARNING

CONGRATULATION

THIS IS TO CERTIFY THAT
PROF. MADYA. DR. SYAFINAZ AMIN NORDIN,
PROF. MADYA. DR. WAN ZUHAINIS SAAD,
SITI FARHANA BAJUNID, AMIRA FATHINI AZMAN, ASHREEN NORMAN,
GOBAKANAGE ASHEN INDIMAL GOMES, MOHD AMIRUL FAIZ ZULKIFLI,
IZYAN FARTINI MD. ZURI, MUHAMMAD ANUARRUDDIN AZMILUMUR

HAS BEEN AWARDED A
GOLD MEDAL

FOR THE INVENTION, INNOVATION & DESIGN ON E-LEARNING (IIDEL) OF
Leptorinth

AT THE
International University Carnival on e-Learning (IUCEL 2017)
26th -27th September 2017
UNIVERSITI SAINS ISLAM MALAYSIA

PROF. DATO' DR. MUSA BIN AHMAD
VICE CHANCELLOR
UNIVERSITI SAINS ISLAM MALAYSIA

MEIPTA MyCeL

International Journal of Environmental Research and Public Health

MDPI

Article

Gamification, a Successful Method to Foster Leptospirosis Knowledge among University Students: A Pilot Study

Nurul Natasya Azhari [1], Rosliza Abdul Manaf [2], Shing Wei Ng [3,4], Siti Farhana Ba
Arsalaan Bajunid [5], Abdul Rahman Mohd Gobil [6], Wan Zuhainis Saad [5] and Sya
Nordin [1,7,*]

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Universiti Putra Malaysia, 43400 UPM Serdang, Selangor, Malaysia; natasyazhari99@gm
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[3] Institute of Bioscience, Universiti Putra Malaysia, 43400 UPM Serdang, Selangor, Malays
shingwei89@gmail.com
[4] Department of Veterinary Clinical Studies, Faculty of Veterinary Medicine, Universiti Pu
43400 UPM Serdang, Selangor, Malaysia
[5] Faculty of Biotechnology and Biomolecular Sciences, Universiti Putra Malaysia, 43400 U
Selangor, Malaysia; farhanabajunid@gmail.com (S.F.B.S.A.B.); zuhainis@upm.edu.my (W
[6] Department of Computer Science, Faculty of Computer and Mathematical Sciences, Univ

1 SENSE MAKING

8 DESIGN MINDSET

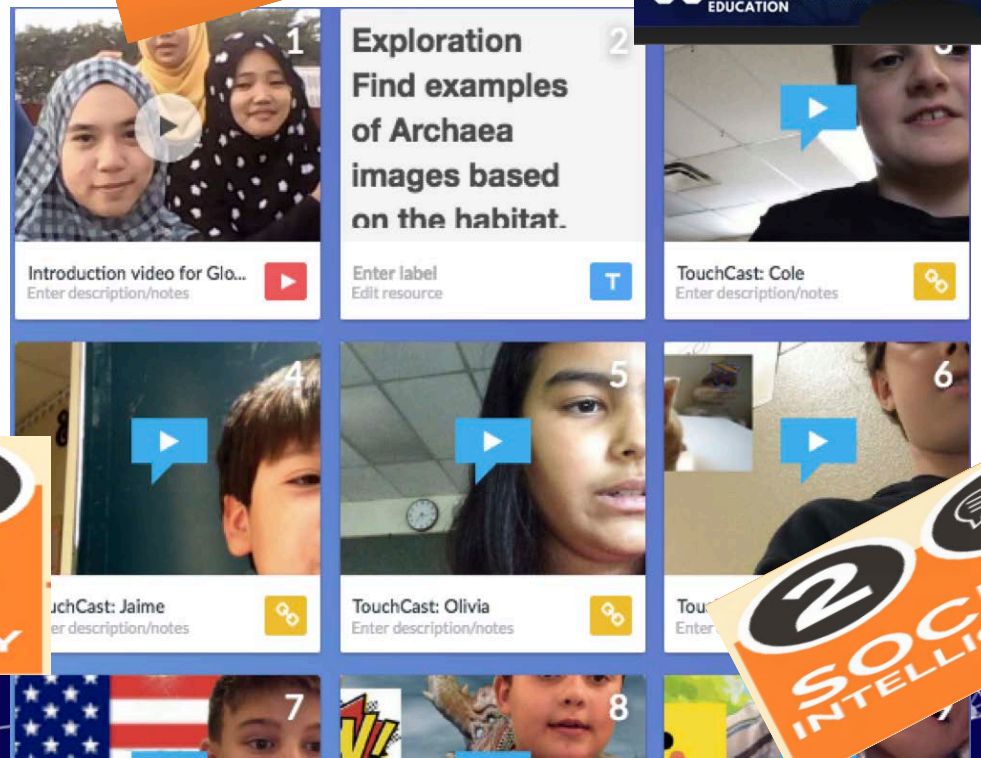
Virtual Microbes Special Education

SERVICE LEARNING IN MICROBIOLOGY

UPM
UNIVERSITI PUTRA MALAYSIA
BERILMU BERBAKTI

الجامعة الإسلامية العالمية ماليزيا
INTERNATIONAL ISLAMIC UNIVERSITY MALAYSIA

USM
UNIVERSITI SAINS MALAYSIA



COMMUNITY RESILIENCE EXPERIENTIAL LEARNING

KEMENTERIAN PENGAJIAN TINGGI

JPT JABATAN PENDIDIKAN TINGGI

- COMMUNITY-BASED LEARNING
- ADAPTIVE LEARNING

SERVICE LEARNING MALAYSIA
SULAM
UNIVERSITY FOR SOCIETY

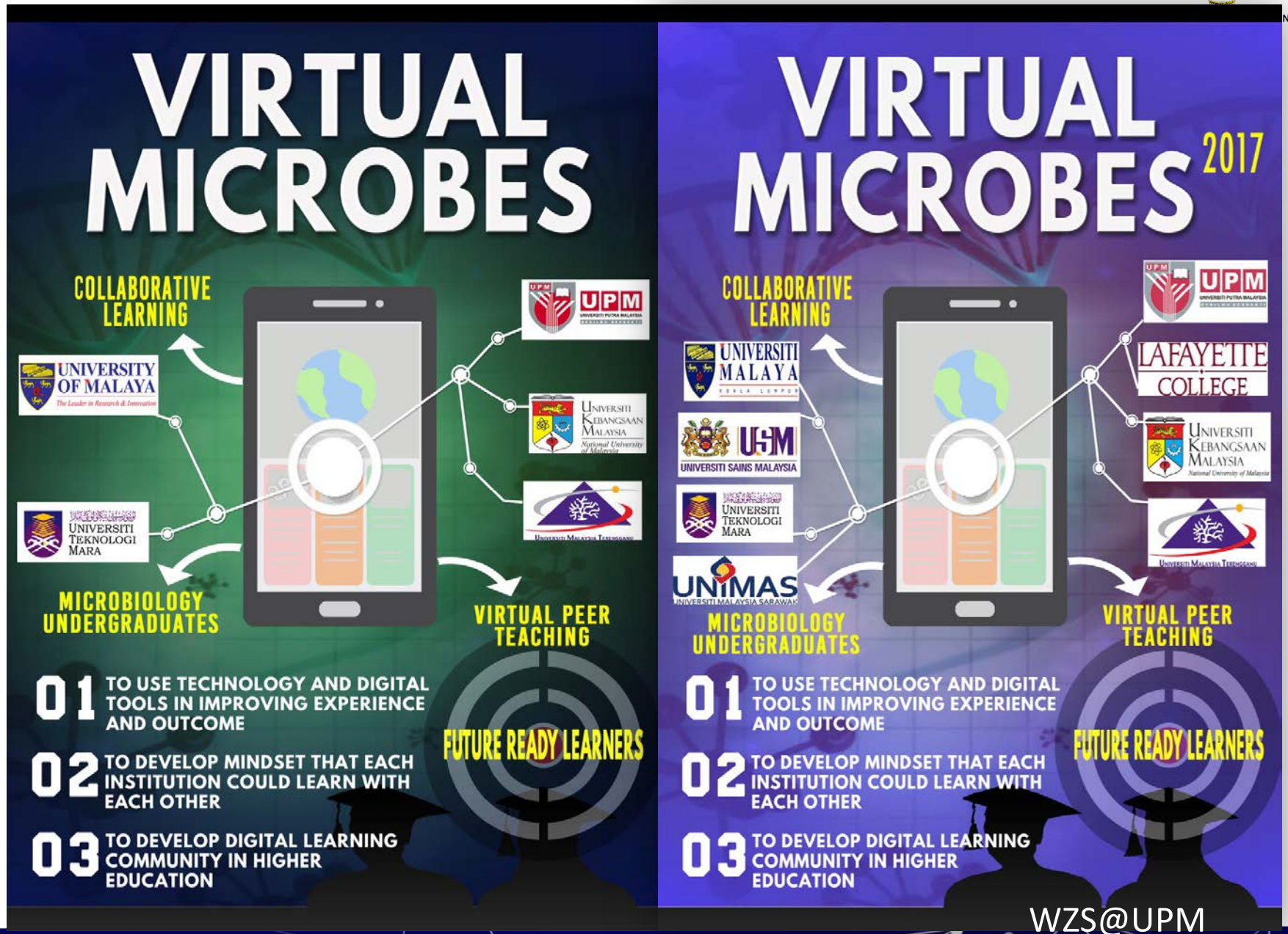
- Communication
- Negotiation
- Sense Making

SULAM -NET

SKILLS

- Social Entrepreneur
- Computational Thinking
- Innovative Thinking
- Social Intelligence
- Virtual Collaboration
- New Media Literacy
- Analytical Thinking
- Design Mindset
- Critical Thinking
- Problem Solving
- Communication
- Negotiation
- Sense Making

COLLABORATIVE PEER LEARNING via VIRTUAL ENVIRONMENT


VIRTUAL MICROBES
COLLABORATIVE LEARNING
UNIVERSITY OF MALAYA
UPM
UNIVERSITI KEBANGSAAN MALAYSIA
UNIVERSITI TEKNOLOGI MARA
MICROBIOLOGY UNDERGRADUATES
VIRTUAL PEER TEACHING
01 TO USE TECHNOLOGY AND DIGITAL TOOLS IN IMPROVING EXPERIENCE AND OUTCOME
02 TO DEVELOP MINDSET THAT EACH INSTITUTION COULD LEARN WITH EACH OTHER
03 TO DEVELOP DIGITAL LEARNING COMMUNITY IN HIGHER EDUCATION
FUTURE READY LEARNERS
VIRTUAL MICROBES 2017
COLLABORATIVE LEARNING
UNIVERSITI MALAYA
USM
UNIVERSITI SAINS MALAYSIA
UNIVERSITI TEKNOLOGI MARA
UNIMAS
UNIVERSITI MALAYSIA SARAWAK
UPM
LAFAYETTE COLLEGE
UNIVERSITI KEBANGSAAN MALAYSIA
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FUTURE READY LEARNERS

WZS@UPM

Recording
Yenni Ng
Speaker View
Recording
Remaining Meeting Time: 05:37
bernardtyz thian
Wan Zuhainis Saad
Stella Seow
Adam Chen
Nurin Nasuha Razali
aisyah jamil
Hakimie Amrie
SI JIE LIM
clifford lim
hazig izzazuddin
Ros Akmal
Invite
11
Participants
Share Screen
Chat
Record
Leave Meeting

Shannon O'Gorman 4mo

Hello!

My name is Shannon O'Gorman and I'm a senior psychology major at Lafayette. I am planning on attending Physician's Assistant school after I graduate and becoming a neonatal Physician Assistant. I also have interest in public health. Very excited to be working with you!

ogormans@lafayette.edu

cherryl1 4mo

Hi everyone

My name is Lindsey Cherry. I am a senior biology major at Lafayette College. After graduation, I will most likely go into a master's entry into nursing graduate program. I look forward to getting to know and working with all of you!

cherryl@lafayette.edu

kerrk 4mo

Hi everone!

My name is Kendall Kerr, and I'm a senior Biology major and Psychology minor at Lafayette! I'm looking forward to working with you all!

kerrk@lafayette.edu

Add comment

Anonymous 4mo

Hello everyone

Im Esther Merious and currently in 2nd achelor Science in t's an honour to be able to all.

Quang Bui 4mo

Hi Everyone,

My name is Quang Bui. I'm a senior Biochemistry major at Lafayette. It's my first semester taking Microbiology. I'm very excited to work with you!

Add comment

Ashe 4mo

Greetings all!

I have a very short name and also short in person. No idea how that correlates but you guys can call me Ashreen, Ashe, Asher, Ashes or even just Ash. I am in my second year majoring in Biotechnology at UPM. Microbiology has always ignited my curiosity and I am very excited about this whole new world of learning. I hope the next few weeks would be an exciting yet adventurous learning journey for all of us. Cheerio for now!

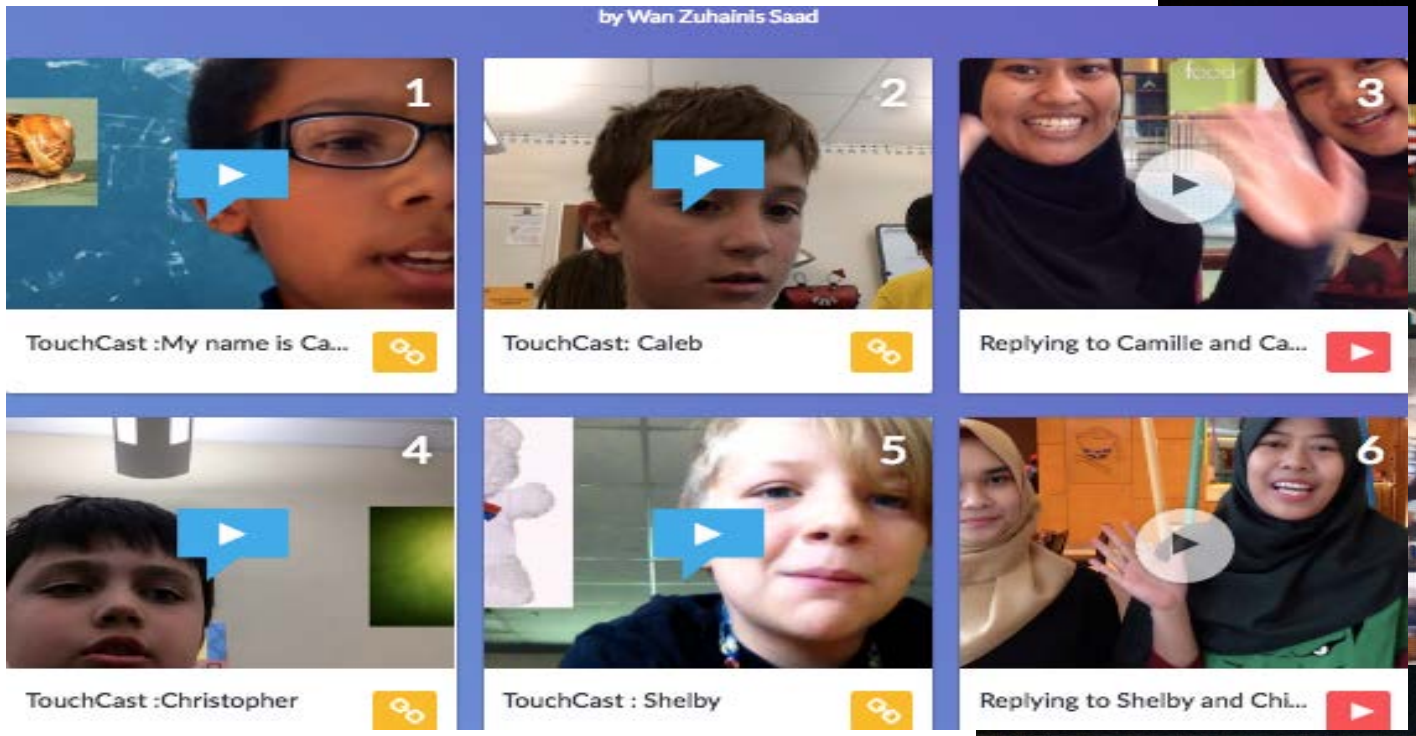
Anonymous 4mo

Hi Everyone,

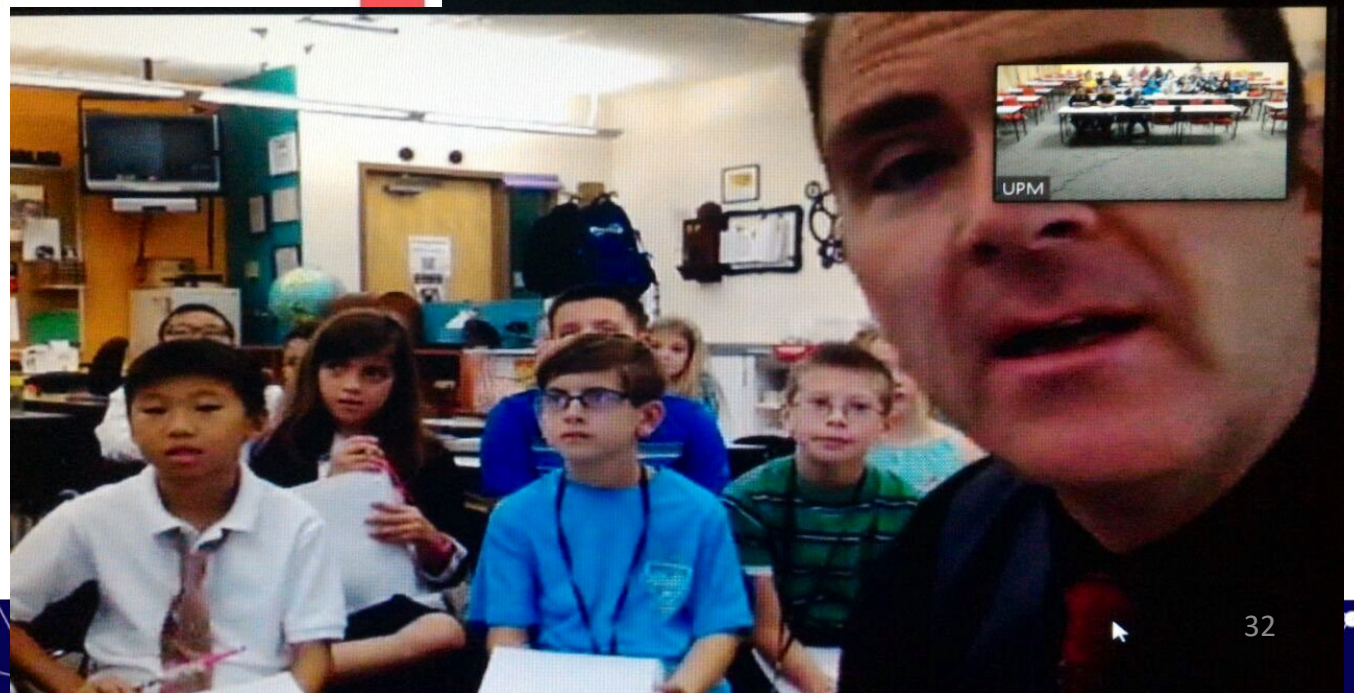
I'm Laurie Caslake, a professor at Lafayette College. I've been teaching at Lafayette for 18 years (whew!). Before joining the faculty at Lafayette, I taught at a few other schools. I went to graduate school at Pennsylvania State University where I earned my Ph.D. in molecular biology. I live with my husband, daughter, and a golden retriever close enough to school that I walk most days. I'm very interested in this collaboration and I can't wait to see how the semester goes.

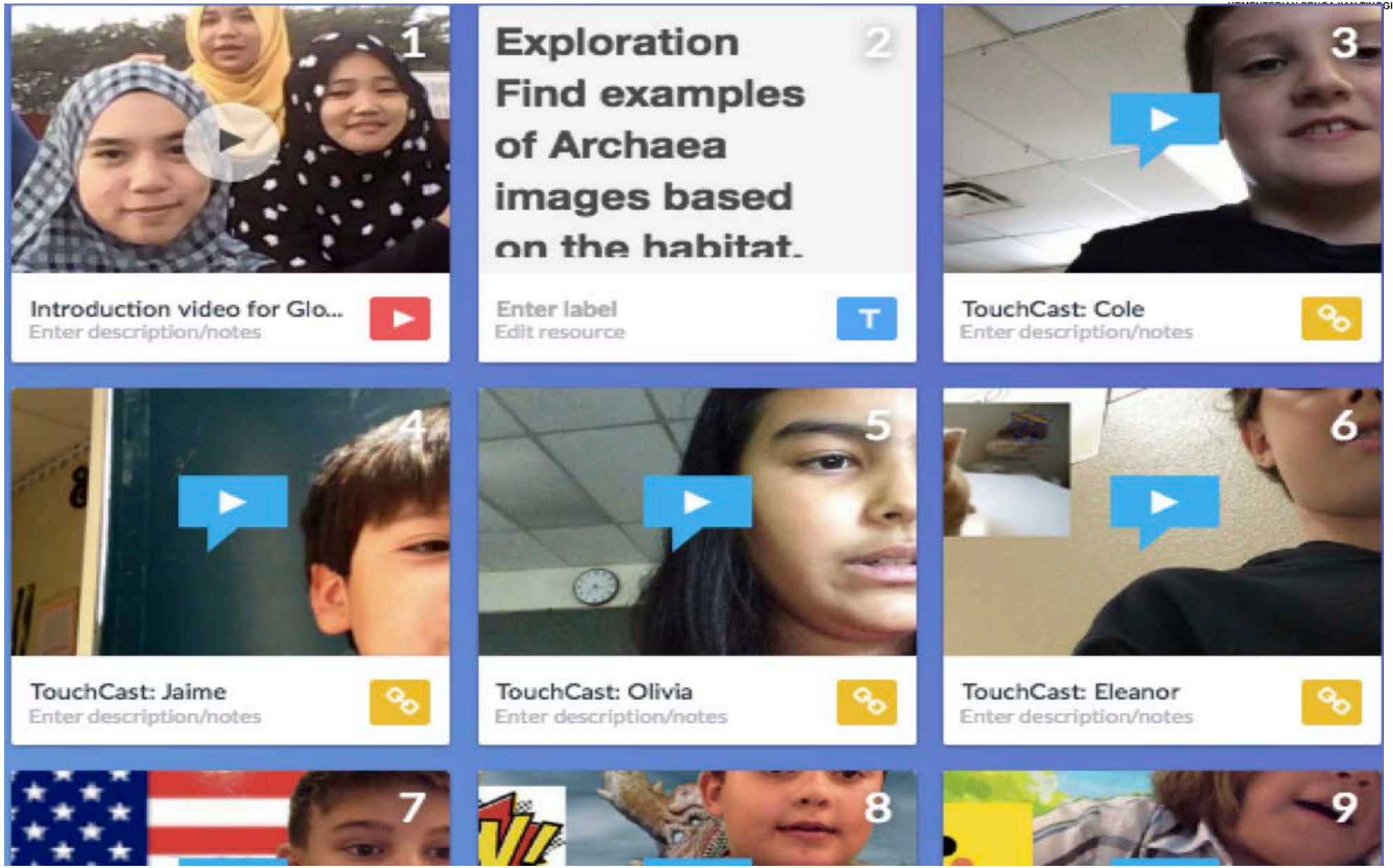
Self Introduction using Padlet with Lafayette College, USA

WZS@UPM



GLOBALIZED ONLINE LEARNING with North Star Elementary and Zuni Elementary Schools, Albuquerque, USA, The FIRST virtual collaborative learning outreach




1
Introduction video for Glo...
Enter description/notes
Exploration
Find examples
of Archaea
images based
on the habitat.
2
Enter label
Edit resource
3
TouchCast: Cole
Enter description/notes
4
TouchCast: Jaime
Enter description/notes
5
TouchCast: Olivia
Enter description/notes
6
TouchCast: Eleanor
Enter description/notes
7
8
9

04:14

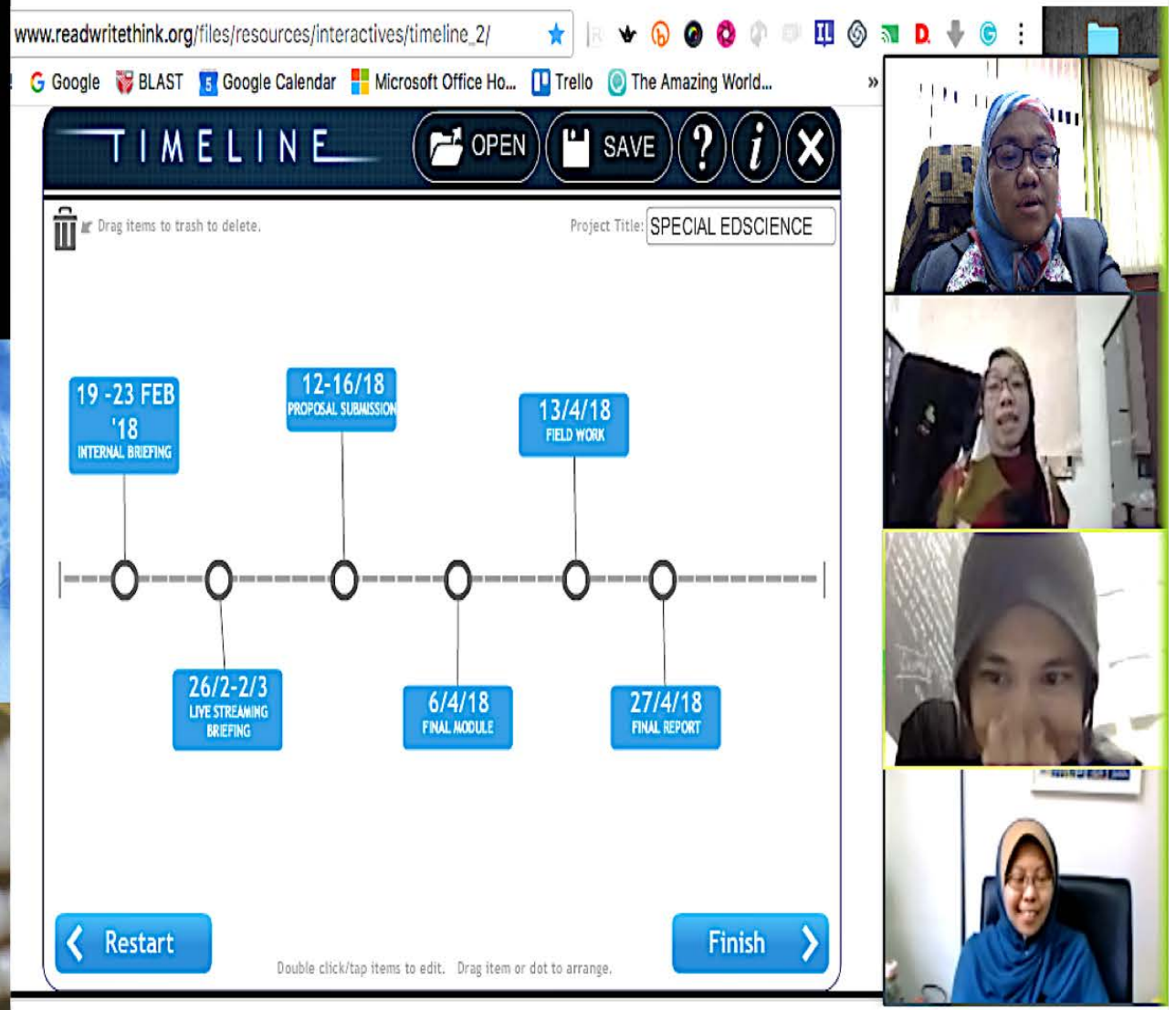
Virtual Microbes Special Education

SERVICE LEARNING IN MICROBIOLOGY

UPM UNIVERSITI PUTRA MALAYSIA

الجامعة الإسلامية العالمية ماليزيا
INTERNATIONAL ISLAMIC UNIVERSITY MALAYSIA

USM UNIVERSITI SAINS MALAYSIA



How?

Font Paragraph

VIRTUAL MICRO

Choose a pathogen from the following list and pre
questions below as a guide to prepare your review ar
together with a turnitin report (should be below 30% si

Format of the review article:

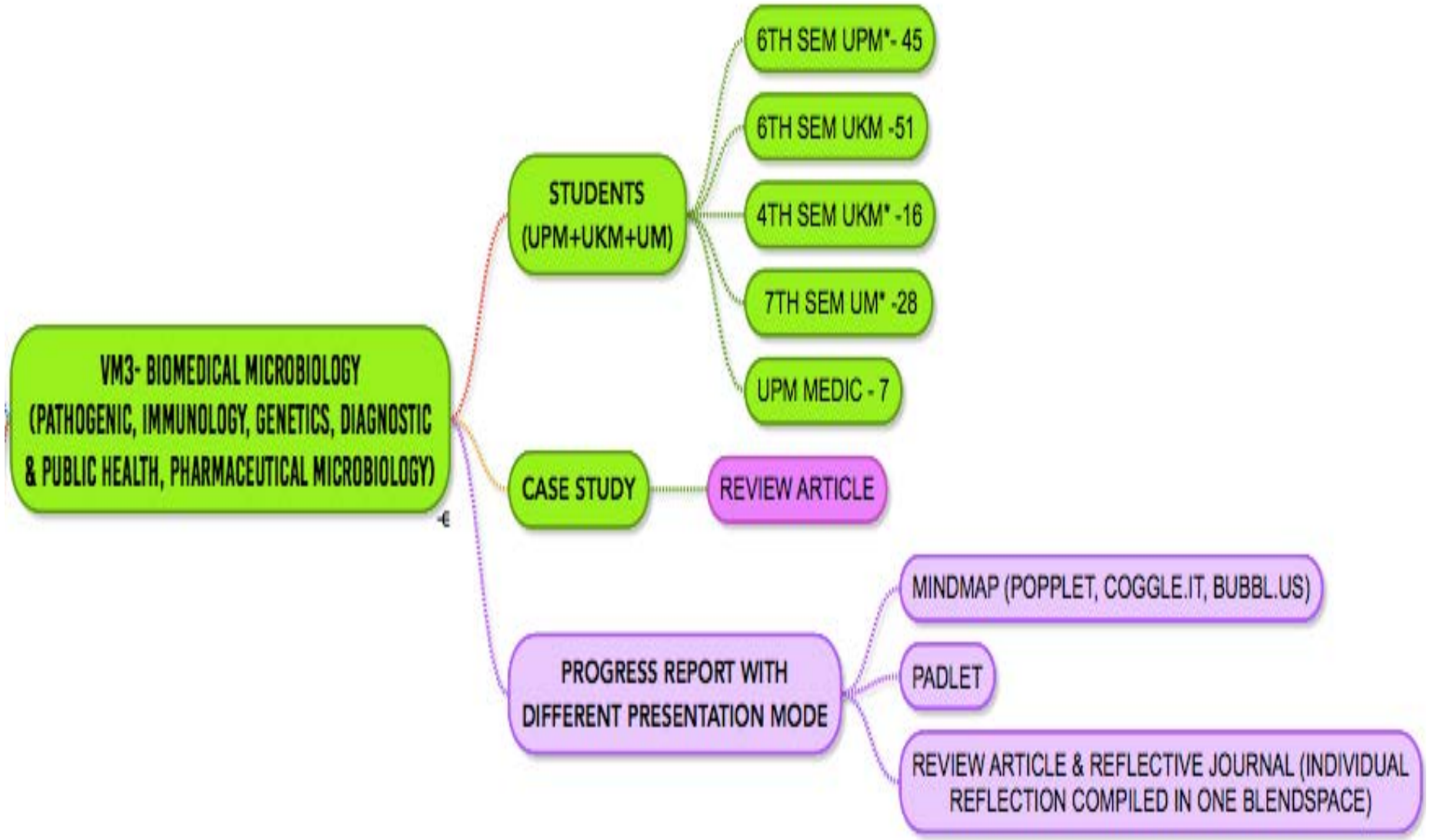
1. Refer to the review article provided for the form
2. Words count should be between 5000 to 8000
3. Format for references should be same as the arti

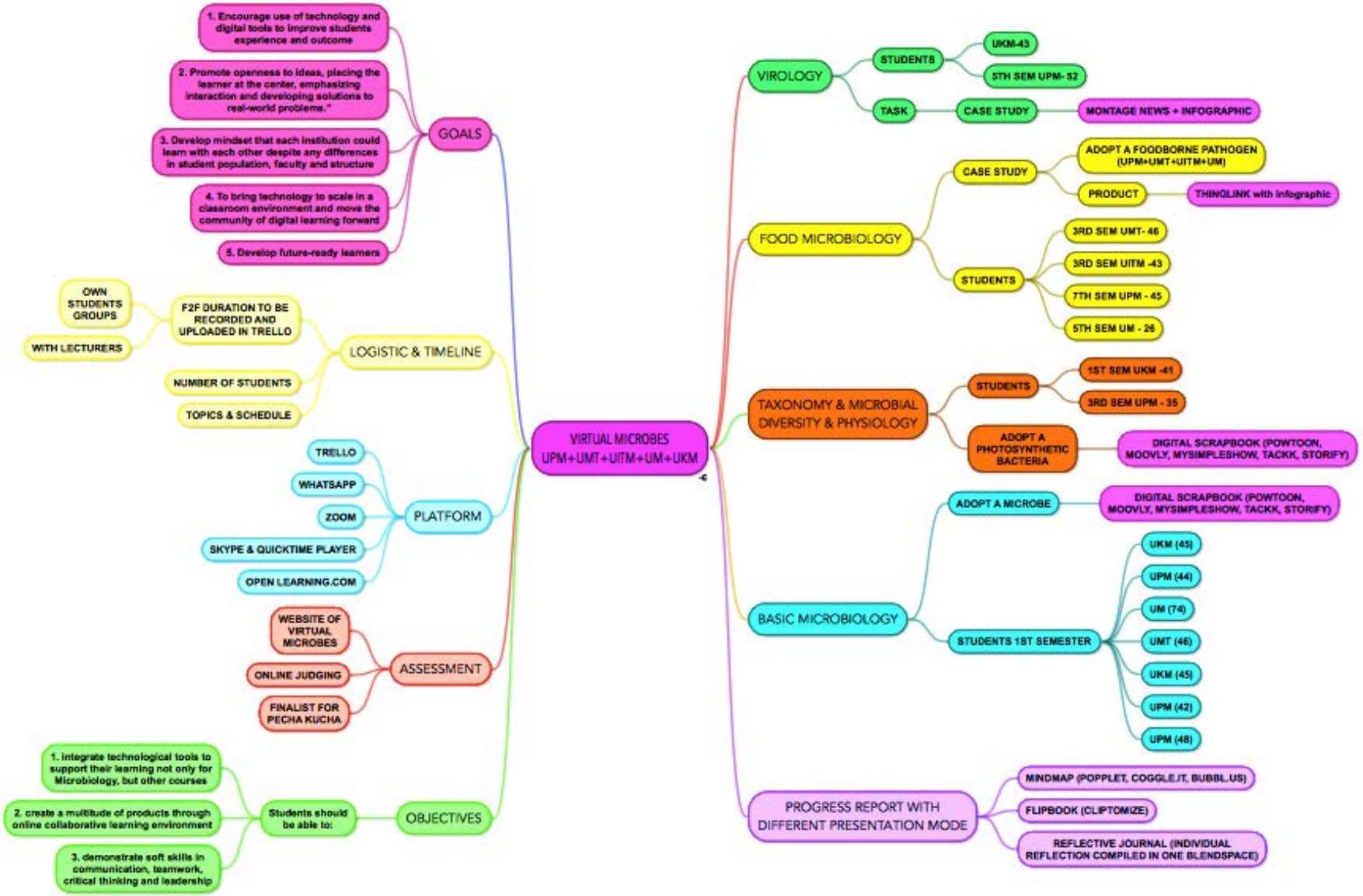
List of pathogen:

Aspergillus fumigatus	Human immunodeficie (HIV)	
Candida spp.	Human papillomavirus	
Corynebacterium diphtheriae	Influenza virus	
Cryptococcus neoformans	*Mycobacterium tuberc*	
Dengue virus	*Plasmodium falciparum*	*Vibrio* spp.
Hepatitis B virus (HBV)	Respiratory syncytial virus (RSV)	Zika virus (ZiV)

Pathogenic microbiology:

1. Statistic of the disease of interest (Global and Malaysia)
2. Describe the biology of the pathogen

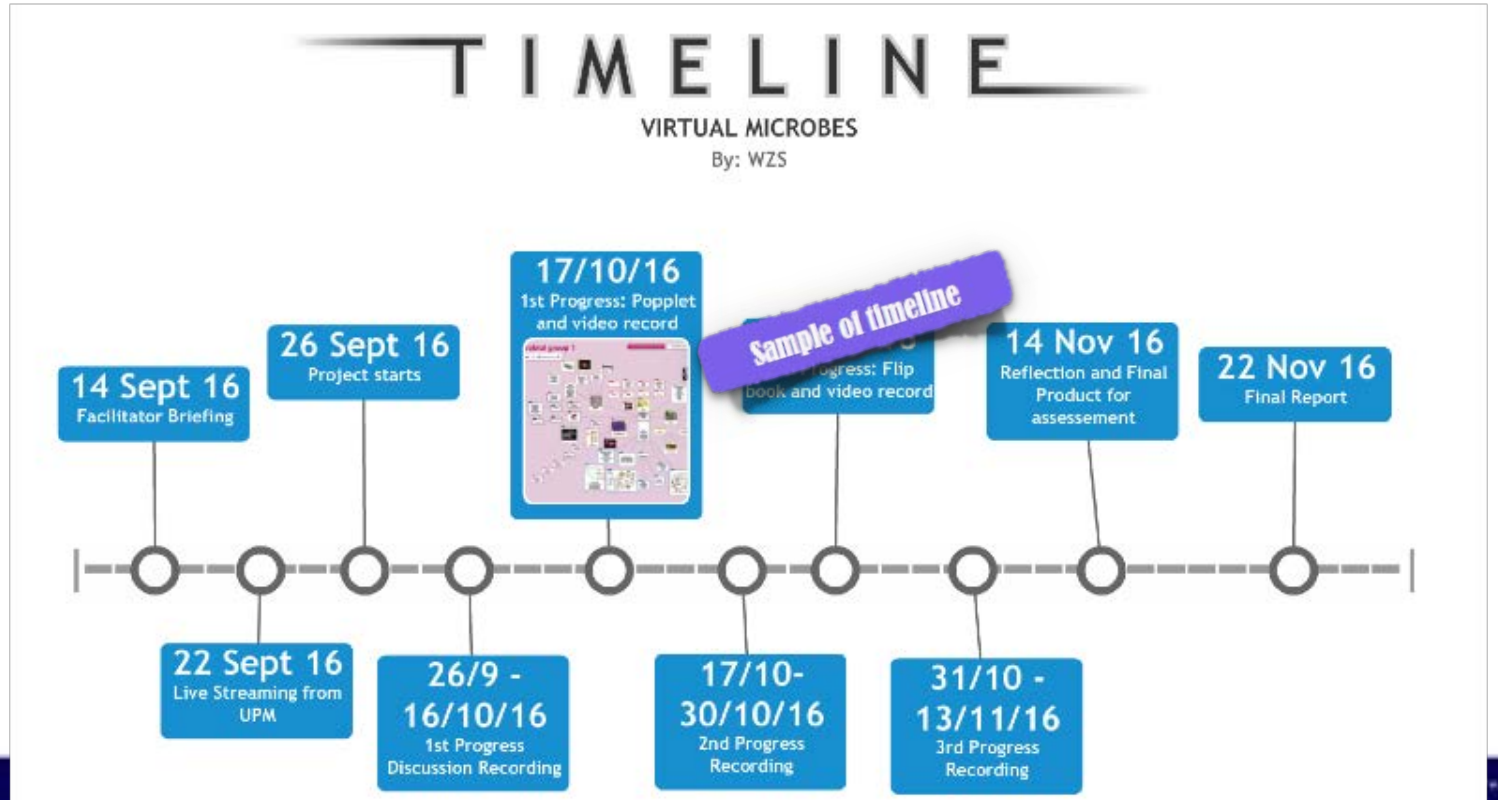

VM3- BIOMEDICAL MICROBIOLOGY (PATHOGENIC, IMMUNOLOGY, GENETICS, DIAGNOSTIC & PUBLIC HEALTH, PHARMACEUTICAL MICROBIOLOGY)
STUDENTS (UPM+UKM+UM)
6TH SEM UPM*- 45
6TH SEM UKM -51
4TH SEM UKM* -16
7TH SEM UM* -28
UPM MEDIC - 7
CASE STUDY
REVIEW ARTICLE
PROGRESS REPORT WITH DIFFERENT PRESENTATION MODE
MINDMAP (POPPLET, COGGLE.IT, BUBBL.US)
PADLET
REVIEW ARTICLE & REFLECTIVE JOURNAL (INDIVIDUAL REFLECTION COMPILED IN ONE BLENDSPACE)


VIRTUAL MICROBES
UPM+UMT+UITM+UM+UKM
GOALS
1. Encourage use of technology and digital tools to improve students experience and outcome
2. Promote openness to ideas, placing the learner at the center, emphasizing interaction and developing solutions to real-world problems."
3. Develop mindset that each institution could learn with each other despite any differences in student population, faculty and structure
4. To bring technology to scale in a classroom environment and move the community of digital learning forward
5. Develop future-ready learners
LOGISTIC & TIMELINE
F2F DURATION TO BE RECORDED AND UPLOADED IN TRELLO
OWN STUDENTS GROUPS
WITH LECTURERS
NUMBER OF STUDENTS
TOPICS & SCHEDULE
PLATFORM
TRELLO
WHATSAPP
ZOOM
SKYPE & QUICKTIME PLAYER
OPEN LEARNING.COM
ASSESSMENT
WEBSITE OF VIRTUAL MICROBES
ONLINE JUDGING
FINALIST FOR PECHA KUCHA
OBJECTIVES
Students should be able to:
1. integrate technological tools to support their learning not only for Microbiology, but other courses
2. create a multitude of products through online collaborative learning environment
3. demonstrate soft skills in communication, teamwork, critical thinking and leadership
VIROLOGY
STUDENTS
UKM-43
5TH SEM UPM- 52
TASK
CASE STUDY
MONTAGE NEWS + INFOGRAPHIC
FOOD MICROBIOLOGY
CASE STUDY
ADOPT A FOODBORNE PATHOGEN (UPM+UMT+UITM+UM)
PRODUCT
THINGLINK with infographic
STUDENTS
3RD SEM UMT- 46
3RD SEM UITM -43
7TH SEM UPM - 45
5TH SEM UM - 26
TAXONOMY & MICROBIAL DIVERSITY & PHYSIOLOGY
STUDENTS
1ST SEM UKM -41
3RD SEM UPM - 35
ADOPT A PHOTOSYNTHETIC BACTERIA
DIGITAL SCRAPBOOK (POWTOON, MOOVLY, MYSIMPLESHOW, TACKK, STORIFY)
BASIC MICROBIOLOGY
ADOPT A MICROBE
DIGITAL SCRAPBOOK (POWTOON, MOOVLY, MYSIMPLESHOW, TACKK, STORIFY)
STUDENTS 1ST SEMESTER
UKM (45)
UPM (44)
UM (74)
UMT (46)
UKM (45)
UPM (42)
UPM (48)
PROGRESS REPORT WITH DIFFERENT PRESENTATION MODE
MINDMAP (POPPLET, COGGLE.IT, BUBBL.US)
FLIPBOOK (CLIPTOMIZE)
REFLECTIVE JOURNAL (INDIVIDUAL REFLECTION COMPILED IN ONE BLENDSPACE)

Sample of grouping

VM1- Microbiology (G1)		1					6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
UM1	38	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1	1
UMT	46	3	3	3	3	3	2	2	2	2	2	2	2	2	3	2	2	2	2	2	2
UPM1	44	2	2	2	2	2	3	3	3	3	2	2	2	2	2	2	2	2	2	2	2
UKM1	65	3	3	3	3	3	3	3	3	3	3	3	3	4	3	4	4	3	4	4	3
(members)		10	10	10	10	10	10	10	10	10	9	9	9	10	10	10	10	9	10	9	8

VM4- FOOD MICROBIOLOGY		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
UMT	46	4	4	3	3	3	2	3	3	3	3	3	3	3	3	3
UITM	30	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
UPM	45	3	3	2	2	2	3	3	3	3	3	3	3	4	4	4
UM	20			2	2	2	2	2	2	2	2	2	2			
members		9	9	9	9	9	9	10	10	10	10	10	10	9	9	9



KEMENTERIAN PENGAJIAN TINGGI

JPT | JABATAN PENDIDIKAN TINGGI

MODULE TITLE	**ADOPT A MICROBE**
COURSE	**MICROBIOLOGY I**
MODULE CODE/NO	**UPM/UKM/UM/UMT/FBSB-WZS/2016**
DURATION	**8 weeks**
LEARNING RESOURCES	1. Notes- PutraBLAST (UPM) 2. Black, J.G. (2012). *Microbiology: Principles (8th Edition)*. New York: John-Wiley, Inc. 3. Cowan, M.K. (2014). *Microbiology: A Systems Approach (4* McGraw-Hill, Inc. 4. Prescott, L.M., Harley, L.M. & Klein, D.A. (2015). *Microbiol* York: McGraw-Hill, Inc. 5. Talaro, K.P. & Chess, B. (2014). *Foundations in Microbiolo* York: McGraw-Hill, Inc. 6. Tortora, G.J., Funke, B.R. & Case, C.L. (2013). *Microbic (11th Edition)*. Menlo Park: Benjamin/Cummings Pub. Co., In
PRIOR KNOWLEDGE	Introduction to microbial world
TERMS TO KNOW	• prokaryote • metabolism • isolation • eukaryote • microbial nutrition • microbial genetics • antibiotics • cultivation • taxonomy
LEARNING OUTCOMES	By the end of this module, you are able to: 1. Differentiate groups of microorganisms (C4). 2. Describe the characteristic and roles of the microorganism (A4) 3. Relate metabolisms with microbial growth (TS,LL)
COURSE CONTENTS AND LEARNING ACTIVITIES	This is a group task. You have been divided in... universities. Each group is to submit a **Digital Sc...** interest. Retrieve and gather information about ... microbe fr... journals, books and other wide variety of reliable resourc... assimilating and interpreting information relevant to the microbe, ... detailing the findings on the microbe. The content of the scrapbook MICROBE'S NAME: NICK NAME (if any): IMAGES (include Micrographs): CLASSIFICATION (Taxanomy and Nomenclature: DESCRIPTION (Characterization): ECOLOGY: METABOLISM AND NUTRITION: SIGNIFICANTS: REFERENCES: MY GROUP: The Scrapbook should include the current topics on the microbe selected. All articles and references should be compiled in the scrapbook. The digital scrapbook can be prepared by using Web2.0 tools. The followings are the examples of some of the tools you can use:

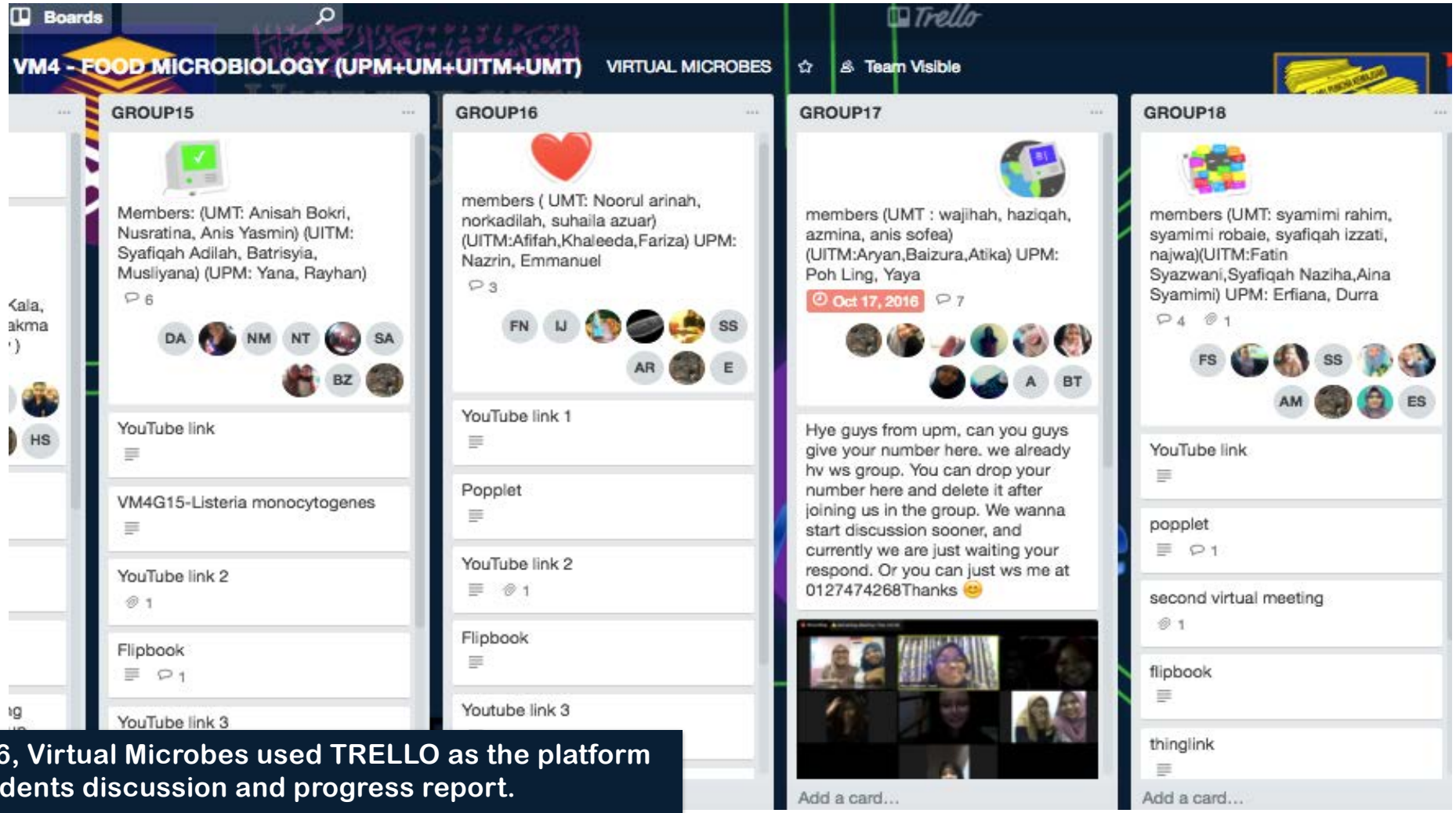
Module for Adopt A Microbe for VM

	http://www.evernote.com
ISSUU	http://issuu.com/
	http://www.powtoon.com/
Mixbook	http://www.mixbook.com/
Cliptomize	http://cliptomize.com/
GoAnimate	http://goanimate.com/
Adobe	http://www.adobe.com/
Every Child Has a Story	http://www.tikatok.com/
ePUBBUD	http://epubbud.com/
educlipper	https://educlipper.net/
thinglink.	http://www.thinglink.com/
picovico	http://www.picovico.com/
blendspace	https://www.blendspace.com/
www.freedigitalscrapbooking.com www.digitalscrapbooking-free.com, www.scrapbookflair.com	
interactive powerpoint OR any other suitable software and apps.	
ASSESSMENT	Evaluation of the scrapbook will be based on the rubric provided.

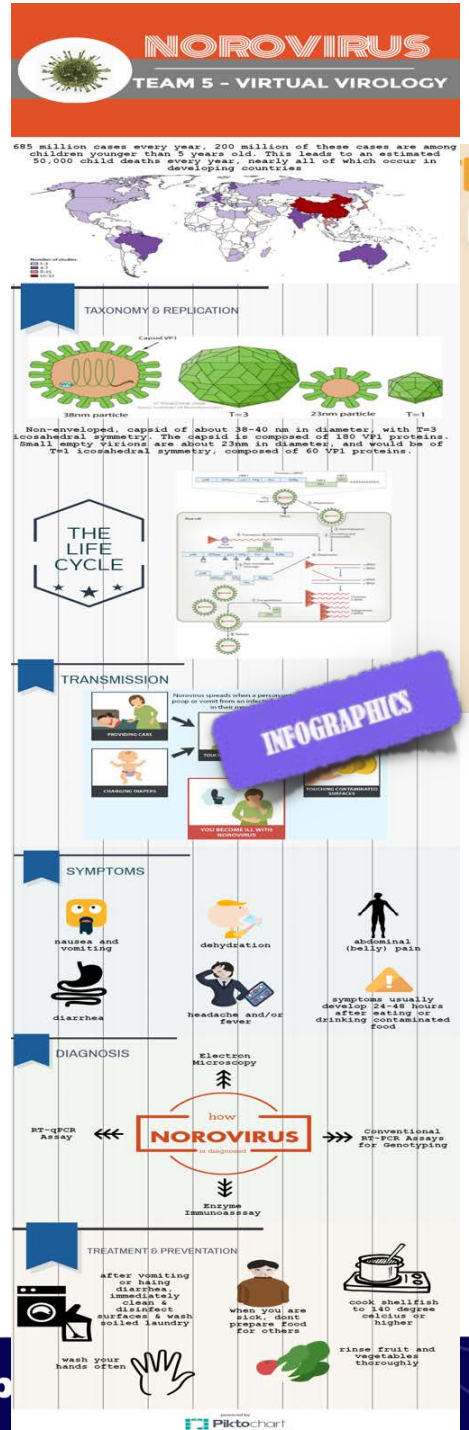
RUBRIC FOR DIGITAL SCRAPBOOK

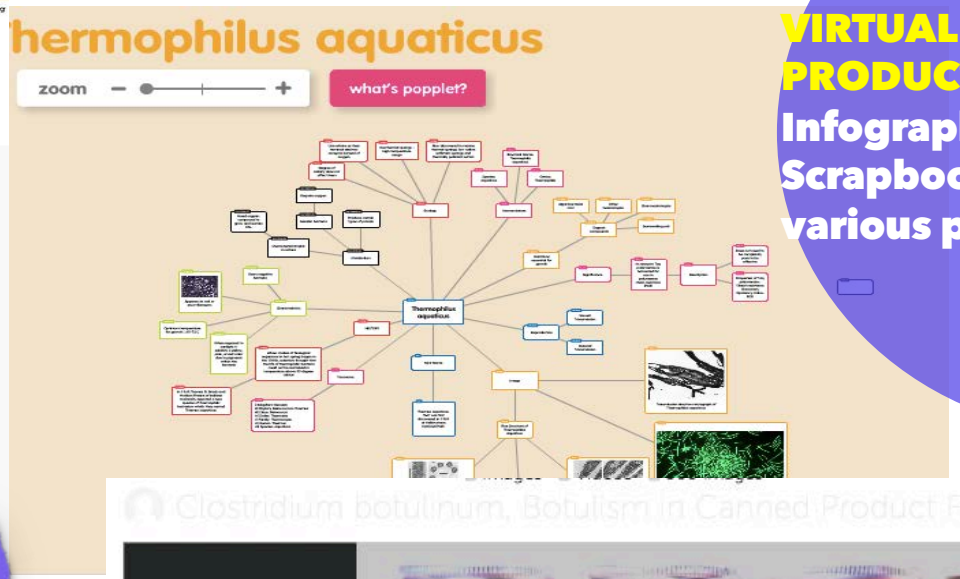
Points	4 Excellent	3 Good	2 Satisfactory	1 Needs Improvement	Earned assessment
Content	Information is complete and is enhanced by accurate and appropriate details	Main points are covered but lack some detail.	Some main points and details are missing.	Main points are not complete and are greatly lacking in detail.	
	Pictures, photographs, drawings, diagrams, graphs, or other similar devices add to the overall effectiveness of the scrapbook; captions are relevant and explanatory.	Number and types of visuals are adequate as are captions.	More and better visuals could be used; captions only identify and label rather than explain.	Very little pictorial representation is present; captions are incomplete.	
	Space, shapes, textures, and colors provide information themselves and add to the overall effectiveness of the scrapbook.	Design elements and principles used a… adequate…	Sl… dence of …e design …nd …ples.	There is no consideration of design elements and principles.	
Use of Tools	The use of audio/video/graphics/ photographs is integrated seamlessly into several different artifacts.	The use of audio/video/graphics/ photographs is included and appropriate	The use of audio/video/graphics/ photographs is included but is used randomly and without purpose	No use of audio/video, or graphics. The photos and audio or video are distracting from the content of the portfolio	
Theme	The scrapbook is easy to read. Fonts, point size, bullets, italics, bold and indentations for headings and sub-headings enhance the presentation. Background and colors enhance the readability and aesthetic quality of the text.	The scrapbook is ***generally*** easy to read. Fonts, point size, bullets, italics, bold. A few minor format changes would enhance the presentation. Background and colors generally enhance the readability of the text.	The scrapbook is often ***difficult*** to read. Fonts, point size, bullets, italics, bold. Some formatting tools are under or over-utilized. Background and colors are ***distracting*** in some places. They diminish somewhat the readability of the text.	The scrapbook is difficult to read. Fonts, point size, bullets, italics, bold. Many formatting tools are under or over-utilized.. Background and colors are distracting. ***They diminish the readability of the text.***	

Rubric for digital scrapbook assessment



In 2016, Virtual Microbes used TRELLO as the platform for students discussion and progress report.

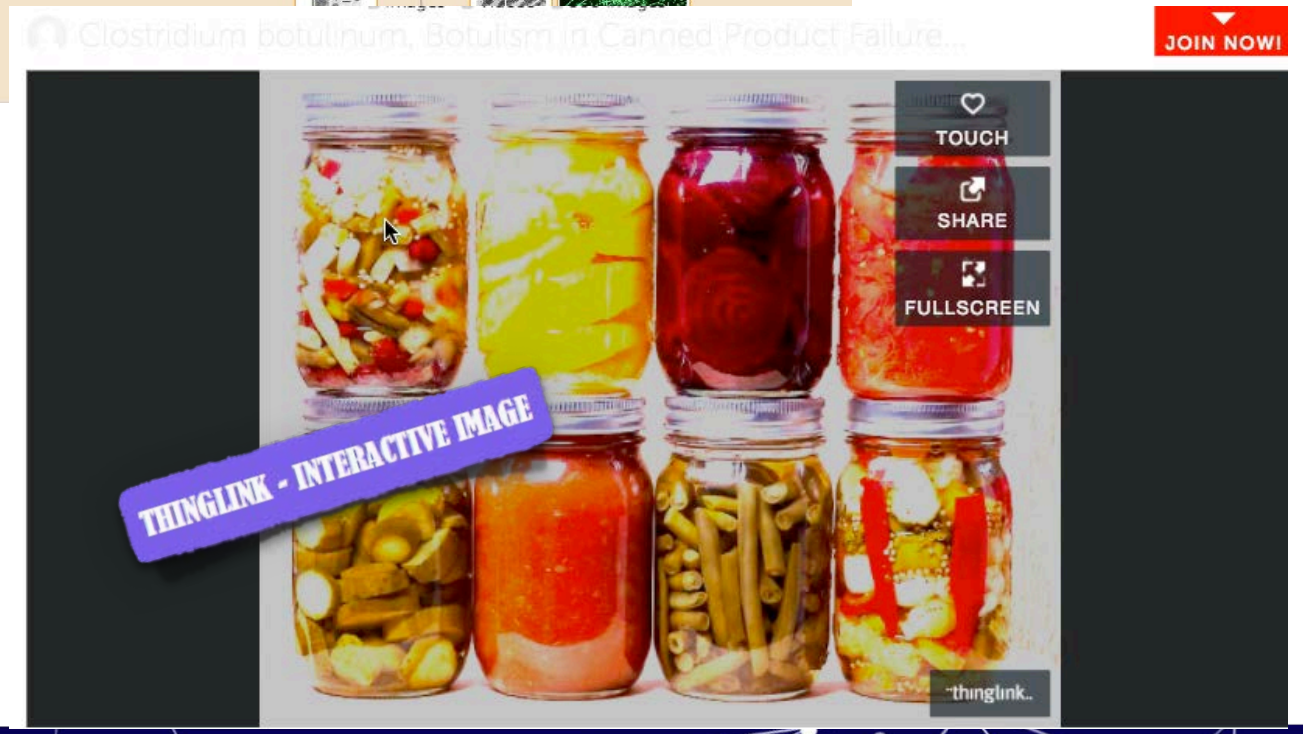


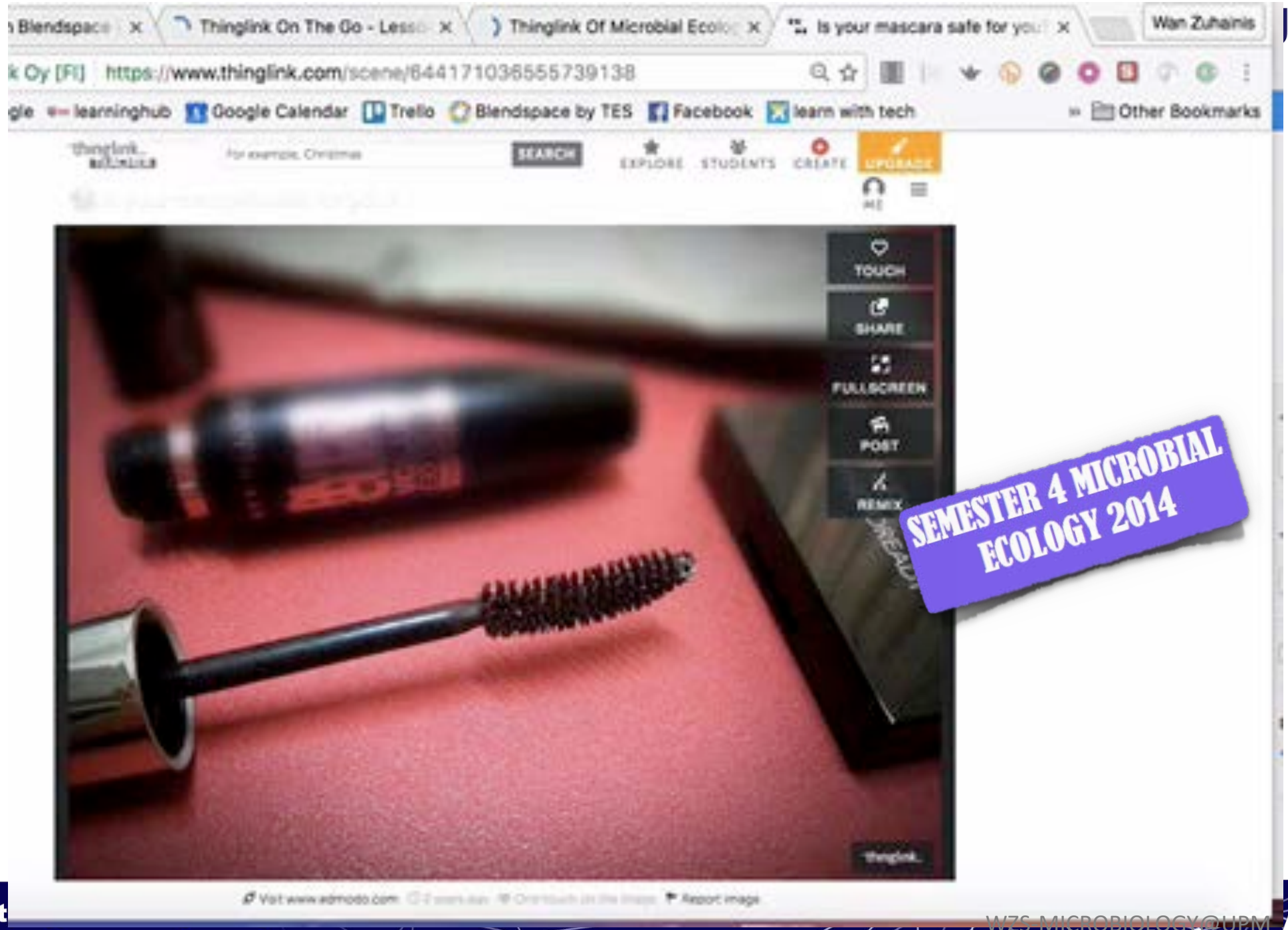


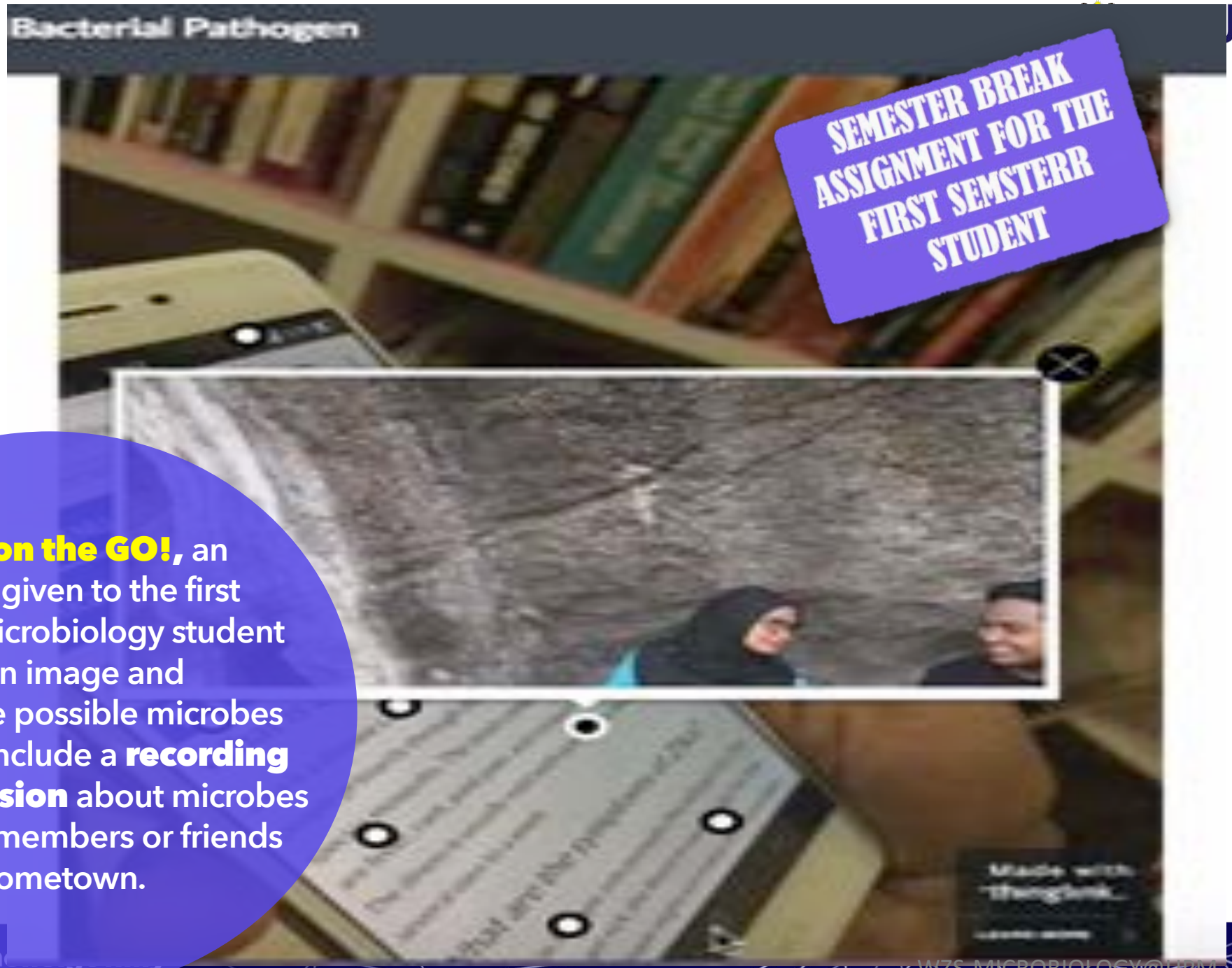
INFOGRAPHICS

VIRTUAL MICROBES PRODUCTS:

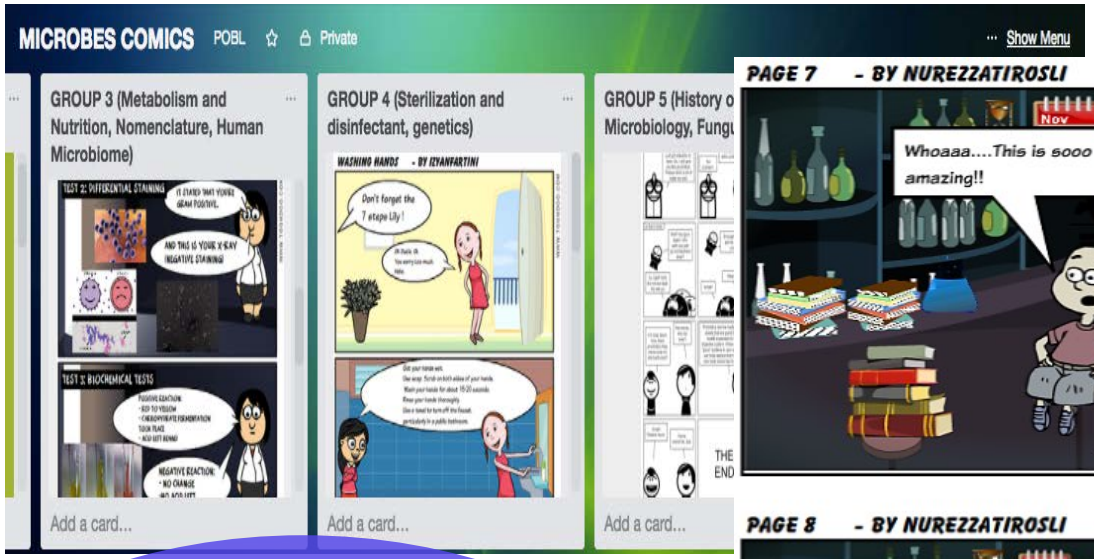
Infographics, Digital Scrapbook, reflections in various platforms.

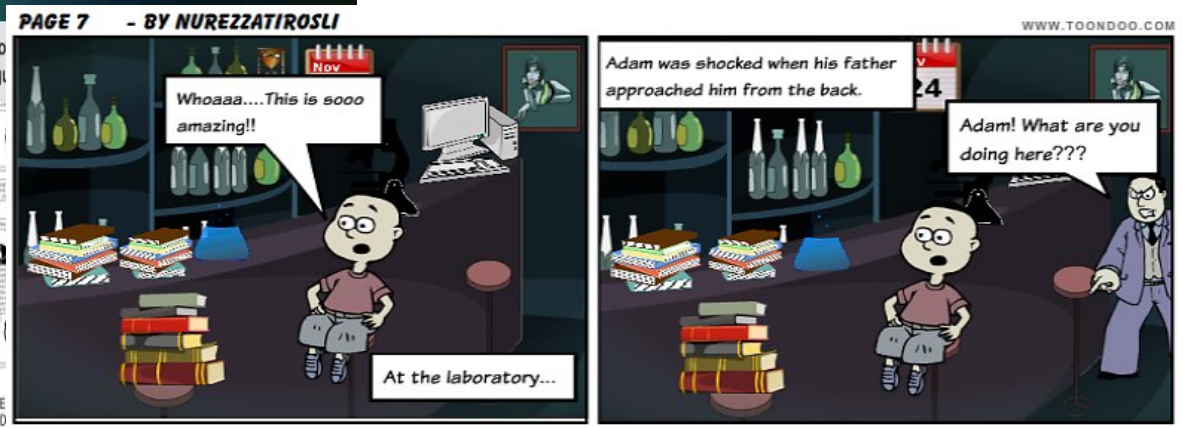


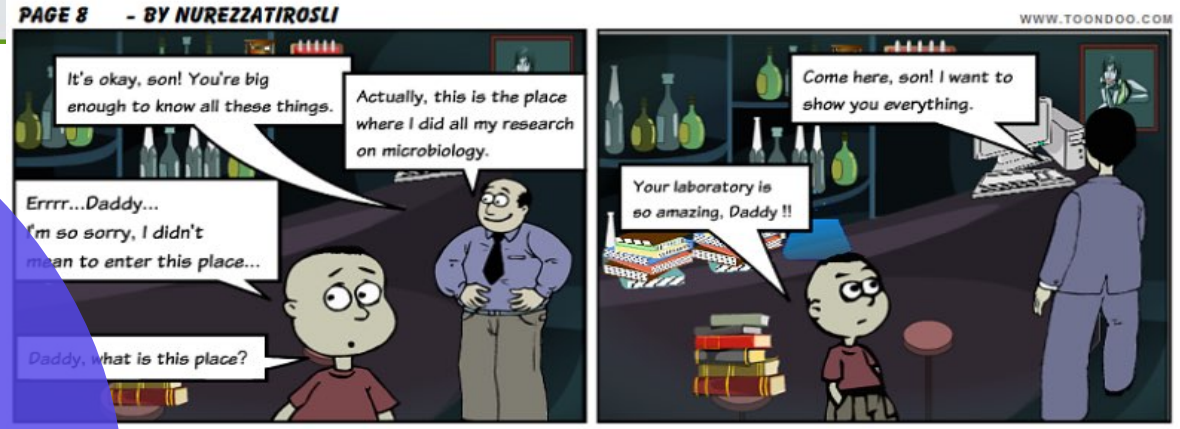

Blendspace
Thinglink On The Go - Less
Thinglink Of Microbial Ecolo
Is your mascara safe for you
Wan Zuhainis
https://www.thinglink.com/scene/644171036555739138
learninghub
Google Calendar
Trello
Blendspace by TES
Facebook
learn with tech
Other Bookmarks
SEARCH
EXPLORE
STUDENTS
CREATE
UPGRADE
TOUCH
SHARE
FULLSCREEN
POST
REMIX
SEMESTER 4 MICROBIAL ECOLOGY 2014
Visit www.edmodo.com
Report image

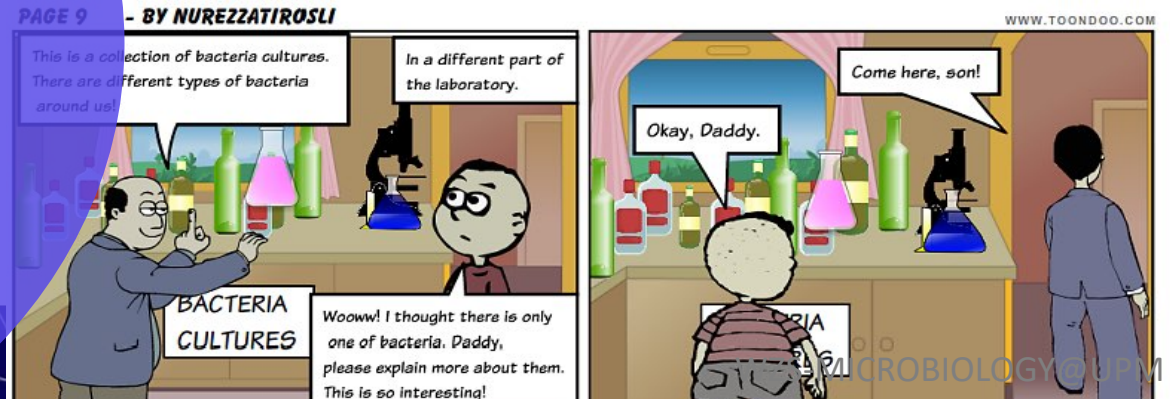


Thinglink on the GO!, an assignment given to the first semester Microbiology student to capture an image and describe the possible microbes found and include a **recording of a discussion** about microbes with family members or friends from their hometown.









MICROBES COMIC was a task for students to develop comic based on the Microbiology topics.

I believe in rigor and helping student to develop critical thinking, reading and writing skills. Learning should be fun!

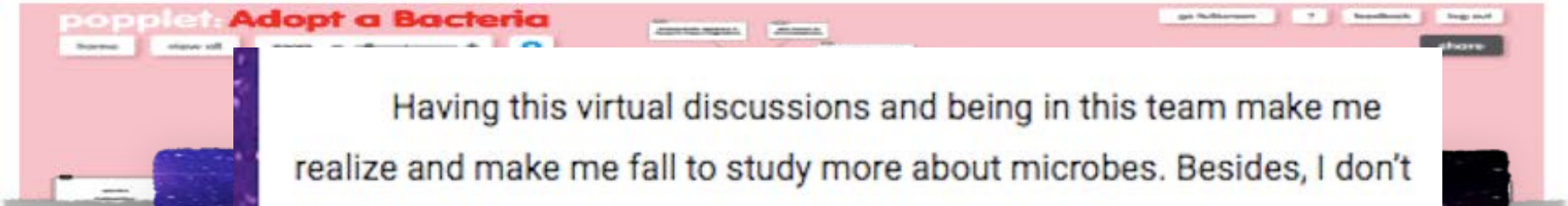
Press Esc to exit full screen mode.
THE AWESOME
MICROBES
CARNIVAL
19 & 20 November 2015
Panggung Percubaan, 9am - 5pm
UNIVERSITI PUTRA MALAYSIA
Augmented reality
3D Printers and 3D Models
Microbe Products Sales
Snack Bar
Promoted
Suggested
More like this
1/19

The first day of me knowing that I had to complete a project with UPM students , I was complaining a lot about how tired and busy I was for this semester (my honest confession :( ) . But the day that Dr Wan came to our university to explain about the whole project , I was pretty interested with this kind of new learning that we need to accomplish , since we did not use those kinds of online platforms in our learning way here. It is true , UPM students are unusual , and we , from UKM are lucky to be taught to be unusual like them as well.

Journey of this project

The first thing that we need to do was to record a video , to divide our first tasks. I was ashamed to start the video , so I asked a friend of mine to accompany me (and he was sitting by my side and repeatedly told me not to be ashamed , HAHA). Faiz conducted the fi video and it all went well. We managed to complete our first task by using pop then being uploaded in trello. I was so impressed and happy to see the outcom ce I had never use this platform. Here is our first popplet :

Reflection from UKM student



Having this virtual discussions and being in this team make me realize and make me fall to study more about microbes. Besides, I don't know that there are many of e-learning websites such as Zoom, Popplet, Powtoon, Padlet, and Blendspace. Now I literally know how to use the websites to complete my tasks and doing some projects. Furthermore, it makes us being responsible and cooperates with other members in this team and it can make our bonding become closer. Lastly, I hope that this kind of collaborating program with different universities can be done again as it brings a great impact to a student. Thank you.

UPM-
rsity

Cass Voss- Virtual Microbes Reflection

What I have learnt

I felt I have learnt so much over the past few weeks about both Norovirus which is the virus we chose for our project and about the new media tools available on the internet.

Norovirus

Norovirus is a constant problem worldwide and I think with a growing population and urbanisation it may get worse because it is highly contagious and has a low infective dose. Sarah and I mostly worked on incidence and prevalence and from this I could tell that the actual cases of norovirus may be under estimated. This is because I could find very little accurate statistical data available for third world countries and in these countries they do have limited access diagnostic equipment to make accurate diagnoses. Furthermore, a majority of mild cases of norovirus are unlikely to be detected. New but small outbreaks of norovirus are constantly occurring and with the discovery of several new stains of norovirus (the main strain is highly mutagenic) I think that this is unlikely to stop in the future.

Media Tools

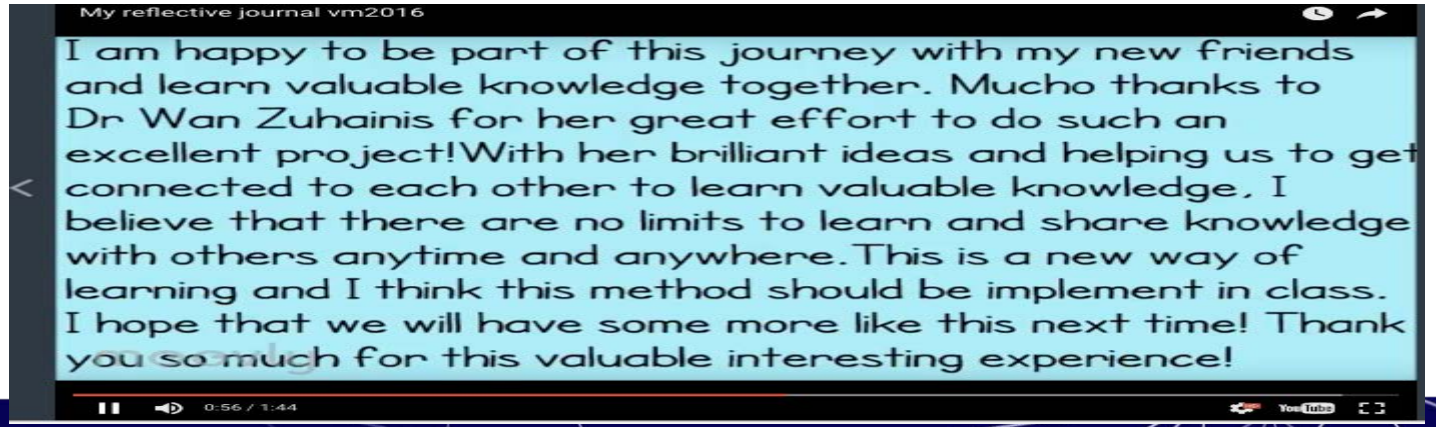
The media we used were Trello, Popplet, Cliptomize, Canva, and Blendspace. I had never heard of any of them before I started this project but all were fairly simple to get the hang of and use. I found them really useful and interesting ways of presenting the information and it was a task to be able to present scientific information in an easy to understand way. Cliptomize and Canva lacked in a collaborative aspect as multiple people could not edit the design at the same time so we had to assign times to access the work. Using Zoom was invaluable as I was able to meet my group members and able to talk about the upcomin work. We did have many technical problems and we couldn't properly hear each other at times.

My Group Members

First of all, they are awesome. They are all really good people and it was a pleasure to mee Minny, Mel, Megat, Munirah & May Ling and work with them. They seemed to know what th doing with the media formats and I feel they have a lot more exposure to them then we do at Latrobe. Farhana was a legend as she guided and organised our group through each task and meeting. Everyone contributed equally to the tasks and I am happy with our final project products.

Dr Wan was an amazing and invaluable person, who was able to help me with questions. Its rewarding to have such an teacher that engages with students because I think that helps my learning.

Reflections from UPM-LaTrobe University



Shannon O'Gorman
21 April 2017
Final Virtual Microbe Reflection

On January 26, 2017 I wrote r g this collab
with students from another univ ote, "before even
project, I am really nervous beca going to be hard to coor
work along side with each other. always having a viable wifi sourc
problem that I have experienced when trying to communicate with peop
countries. I don't know how to use any of the media platforms and I don
any experience with microbiology prior to this class. I heard that the oth
students are mostly microbiology majors and have extensive knowledg
that I might not possibly have as much knowledge as them. However, I a
people from a different background and who will be able to give me a wi
perspective on this educational experience and about their lives as well
collaboratively is very important and I want this to run as smoothly as p

Reflections from UPM-Lafayette College

ISSUE 01 APRIL 26TH 2017

UPM-LC

Anis's Reflective journal :)

In This Issue

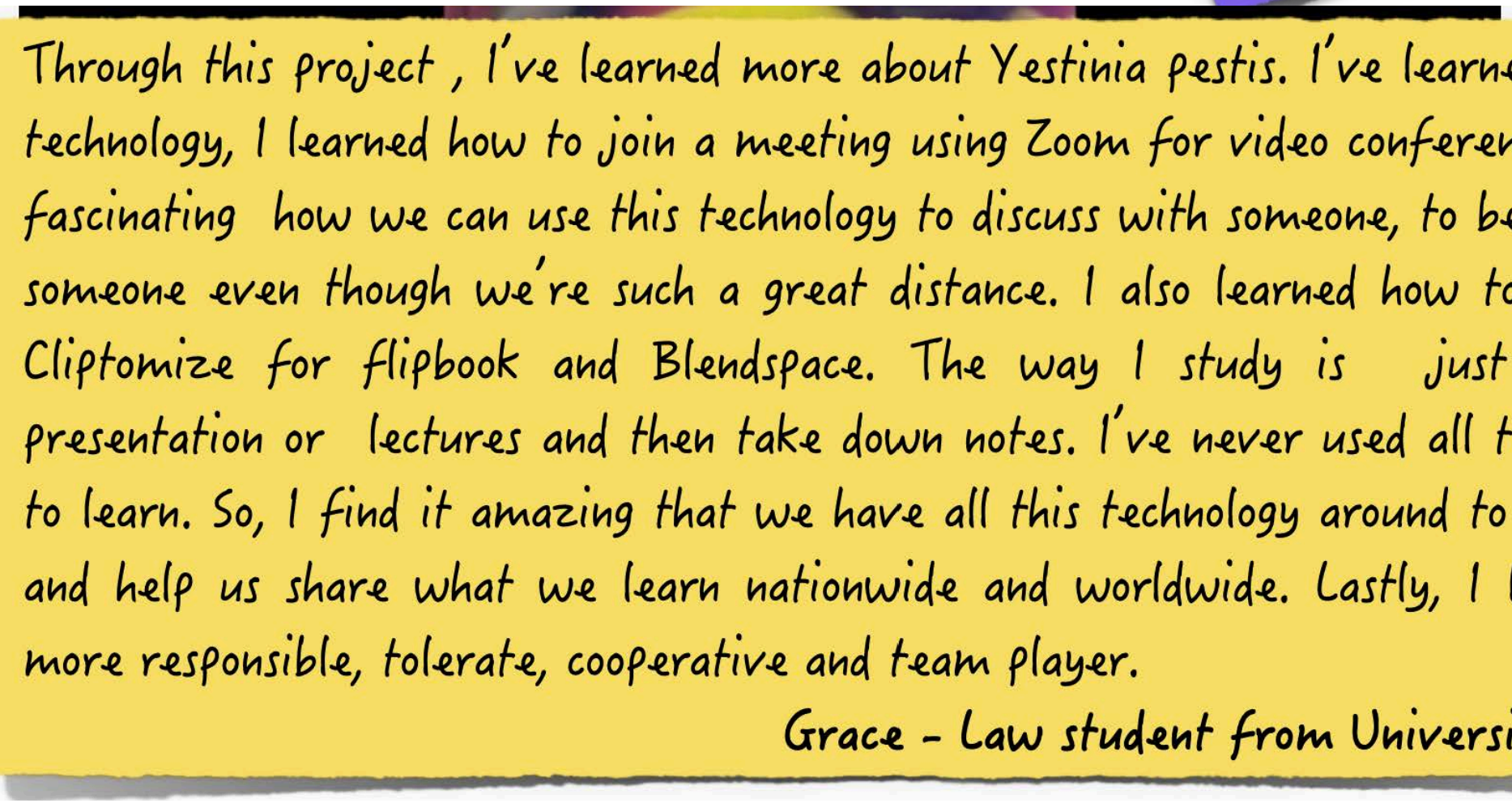
Every new friend is an adventure...the start of new memories

New Knowledge is The most Valuable

The Start Of A New

Upon our first video conference that was relatively easy to schedule despite a large time zone gap, the students were happy to kickstart our experience and get working. We worked really well together by each coming prepared with a potential microbe and presented it to each other. After voting on all the great ideas that were well presented, w chose Zika virus. I appreciate how Hanna was the main coordinator in our project. She reviewed everything we discussed in our video chat over WhatsApp and provided us wi links that made my navigation of these new media platforms easier. The timeline that we

Reflection video from UM- Law student



Through this project , I've learned more about Yestinia pestis. I've learned a lot about technology, I learned how to join a meeting using Zoom for video conference. I found it fascinating how we can use this technology to discuss with someone, to be connected to someone even though we're such a great distance. I also learned how to use Popplet, Cliptomize for flipbook and Blendspace. The way I study is just look at the presentation or lectures and then take down notes. I've never used all this technology to learn. So, I find it amazing that we have all this technology around to help us learn and help us share what we learn nationwide and worldwide. Lastly, I learned to be more responsible, tolerate, cooperative and team player.

Grace - Law student from University of Malaya

SARAH_FREETH
NOVEMBER
13, 2016

Experiences

This assignment was something new and completely different to anything I have ever done before.
In the past 2 years of university most of my assignments (both group and individual) are usually some kind of essay, report or speech. The most technology we use is basic programs like word and powerpoint or occasionally google docs. I was surprised to learn there are so many different online collaboration services (e.g. popplet) that I had never heard about and probably would not ever know about if it were not for this assignment.

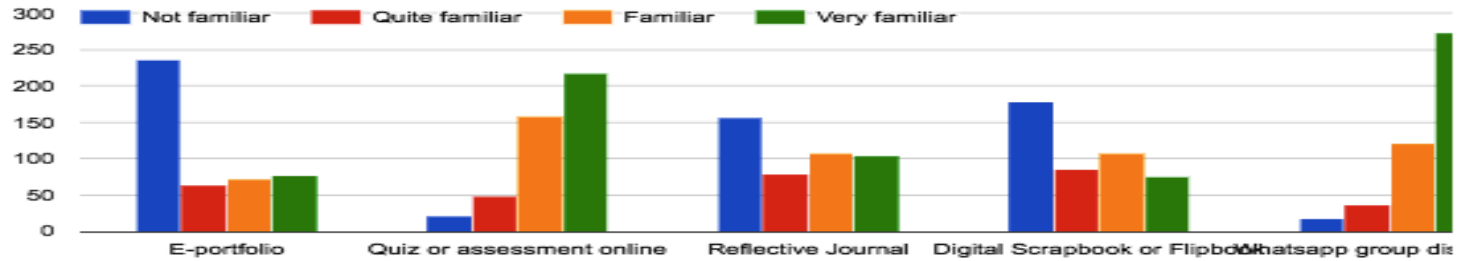
Reflection video from UKM Biology student

	NOT AT ALL	VERY LITTLE	SOMEWHAT	VERY MUCH SO	TOTAL	WEIGHTED AVERAGE
I am more open to learn new things with new people	1.52% 7	6.93% 32	58.01% 268	33.55% 155	462	3.24
I am more responsible	1.30% 6	5.86% 27	55.97% 258	36.88% 170	461	3.28
I am more patient when working in a group	1.52% 7	7.79% 36	53.25% 246	37.45% 173	462	3.27
I can communicate better with other people	0.87% 4	10.43% 48	59.13% 272	29.57% 136	460	3.17
I can better manage my time	2.60% 12	14.32% 66	59.00% 272	24.08% 111	461	3.05
I have improved my self esteem and confidence	1.74% 8	10.22% 47	57.61% 265	30.43% 140	460	3.17
I have become a more organized person	2.61% 12	14.13% 65	59.35% 273	23.91% 110	460	3.05
I am more equipped as 21st Century learner	1.30% 6	10.43% 48	57.39% 264	30.87% 142	460	3.18

Q13 At this point of the project, how do you feel about the "Virtual Microbes"

Data from Questionnaire : Perceived benefits of virtual peer learning with Virtual Microbes among Microbiology undergraduate students

5. Which of these e-learning activities that you are familiar with at the moment:



	STRONGLY DISAGREE	DISAGREE	AGREE	STRONGLY AGREE	TOTAL
I understand Microbiology better with e-learning compared to the conventional way of learning	3.03% 14	15.80% 73	70.56% 326	10.61% 49	462
E-learning is more enjoyable than the conventional way of learning	3.25% 15	13.85% 64	66.67% 308	16.23% 75	462
E-learning makes me more creative compared to the conventional way of learning	1.95% 9	6.71% 31	63.42% 293	27.92% 129	462
E-learning make me more curious about the topics	2.16% 10	17.97% 83	67.53% 312	12.34% 57	462
Learning with technologies is fun	1.30% 6	6.72% 31	65.51% 302	26.46% 122	461
E-learning improves my interactions with other students and lecturers	2.82% 13	11.93% 55	62.26% 287	22.99% 106	461
I want to use more e-learning tools in my learning	3.25% 15	18.44% 85	64.21% 296	14.10% 65	461

INTRODUCTION TO VIRTUAL MICROBES	**https://youtu.be/g9I7WD59Gxs**
FACEBOOK	**https://www.facebook.com/virtualmicrobes/**
YOUTUBE	http://bit.ly/VMplaylist
SAMPLES OF VM PRODUCTS MIND MAP	https://coggle.it/diagram/WL2In4qVIgABgA2S
INTERACTIVE IMAGE (THINGLINK)	https://www.thinglink.com/scene/856416820800782338
ANIMATION (POWTOON)	https://youtu.be/T3sJEuuWMC8
SAMPLES OF REFLECTIONS	**http://bit.ly/2zjt1xv**
	https://youtu.be/jHV_Ndc4mSs
INTRODUCTION TO VM	**https://youtu.be/T7pg0TruVAg**

All are welcome to our
MINIC 2017

The first semester Microbiology, Biotechnology and Cell & Molecular Biology students presenting their Augmented Reality poster and pitch for their microbe products as a solution for problems in various applications.

MICROBES INVENTION, INNOVATION AND IDEATION CHALLENGE

14th December 2017
Dewan Kuliah Utama
Faculty of Biotechnology and Biomolecular Sciences
Universiti Putra Malaysia
2-5 pm

UPM UNIVERSITI PUTRA MALAYSIA
BERILMU BERBAKTI

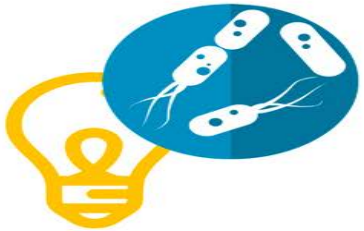
Microbiology@BioTech

MINIC 2018

MICROBES INVENTION, INNOVATION & IDEATION CHALLENGE 2018

Identify a problem in any application
Must be supported by documents

Use a microbe or microbes as a solution to that problem
Must be supported by scientific journals



Develop an A1 poster and a prototype to present your solution

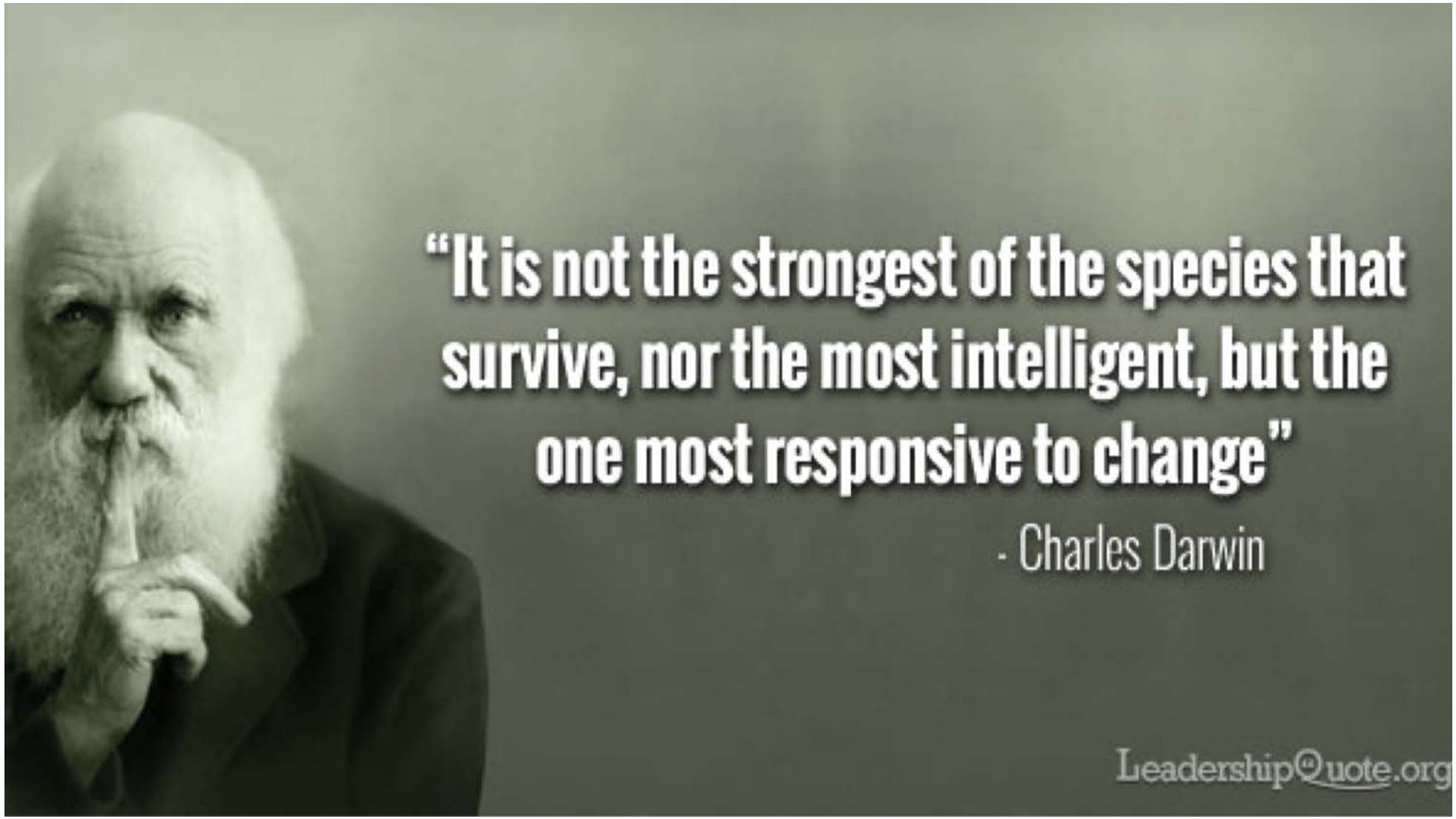
EMPOWERING LEARNERS WITH POBL FOR EXPERIENTIAL LEARNING

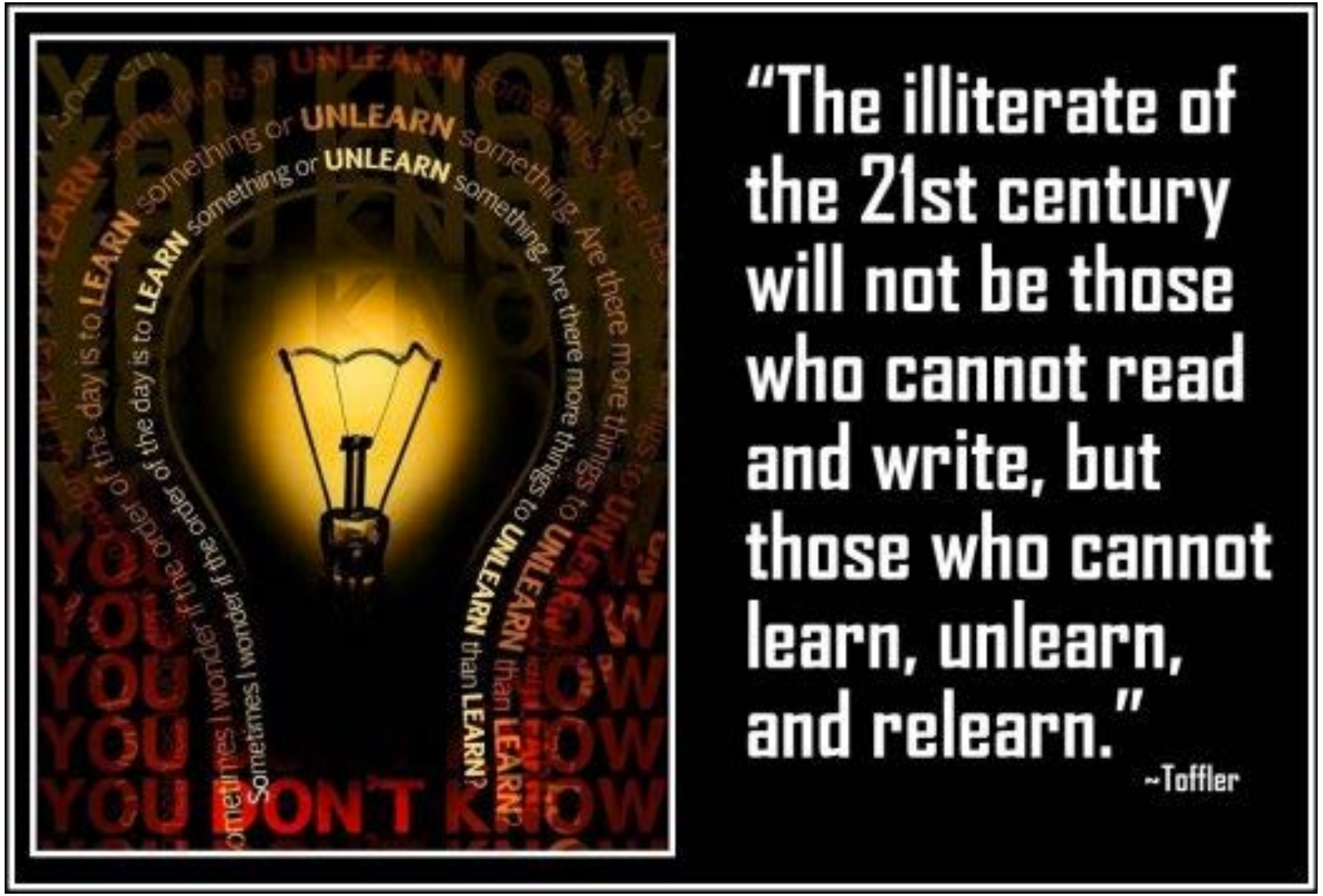
- GAMIFICATION
- E-PORTFOLIO
- REFLECTIVE JOURNAL
- NATIONAL AND INTERNATIONAL COMPETITIONS
- NEWSLETTER OF MICROBES IN RESEARCH WITH AR
- DIGITAL STORYTELLING
- DOCUMENTARY INCLUDING INTERVIEW WITH EXPERTS
- DIGITAL SCRAPBOOK
- MIND MAPPING
- 3D PRINTING
- FLIPPED CLASSROOM MATERIALS
- MINIC

- GLOBALIZED COLLABORATIVE LEARNING
- VIRTUAL MICROBES
- THE AWESOME MICROBES CARNIVAL
- LIFE WITHOUT MICROBES
- MICROBES AND US
- MICROBES COMICS
- THINGLINK ON THE GO WITH INTERVIEW
- ADOPT A MICROBE
- 3MT (3-Minute-Talk)
- PECHA KUCHA MICROBES
- THANK A MICROBE
- AUGMENTED REALITY
- MICROBES IN RESEARCH
- MUSYM2017

INSPIRE

Individualize
Non-traditional
Self-directed
Passion driven
Innovative
Reflective
Experiential Learning


"It is not the strongest of the species that survive, nor the most intelligent, but the one most responsive to change"
- Charles Darwin
LeadershipQuote.org


UNLEARN something or LEARN something. Are there more things to UNLEARN than LEARN?
Sometimes I wonder if the order of the day is to LEARN something or UNLEARN something.
YOU DONT KNOW
"The illiterate of the 21st century will not be those who cannot read and write, but those who cannot learn, unlearn, and relearn."
~Toffler

danke
謝謝
ngiyabonga
teşekkür ederim
спасибо
dank je
thank you
gracias
tapadh leat
bedankt
hvala
mauruuru
mochchakkeram
dziękuję
go raibh maith agat
obrigado
sukriya
kop khun krap
salamat
grazie
arigatō
lakk
dakujem
terima kasih
мерси
감사합니다
merci