Developing MITCET Strategy for Technology Integrated Education.

In the period ahead MITCET will be undertaking an intensive planning exercise to inform/develop MIT chart a path for a technology-integrated educational future consistent with its charter.

**MITCET charge**

MITCET will provide the strategy to enable MIT to move from the current educational state to the future state described by:

- An MIT education that will increasingly consist of experience-based learning that is hands-on, globally connected, and research-intensive (e.g., through UROPs).
- An MIT student's residential experience that will integrate living and learning through technology-enabled residence-based education that supports the very best in-person and on-line pedagogy.

Another way to say this is “Given that our students are changing, how do we teach in a deep way with tools so as to enable substantive learning? And how do we best enable connections across the curriculum for our students to learn?”

Overall the planning process for change is seen as involving the following dimensions:

- Understanding of the current state of education at MIT
- Understanding of elements forcing consideration of change
- Internal examples of change in education
- External examples of change in education
- Definition of stakeholders and their stakes
- Definition of future desired state (vision)
- Understanding of core competencies
- Definition of change paths using three lenses
- Opportunities and risks

Some of the specific activities and data collection related to these dimensions to be conducted in the next few months have been detailed below. OEIT will be primarily undertaking/coordinating the data collection activity with assistance from other MIT offices.

**Process for developing the strategy**

MITCET will meet once a month for two or two and half hours from Oct to May in order to develop the strategy. Subgroups of MITCET will be assigned tasks and may meet more frequently. MITCET will send subgroups to visit a small number of other schools in conjunction with other committees to gather information.

**Data Collection**

**A. Examples of change in education and use of educational technology**

- Current Teaching Learning landscape at MIT
  - What is the distribution of classes
  - What is the distribution of recitations associated with classes
  - What is the attendance in class at 5th week, end of the semester
- What is the average score on the online subject evaluation
- What is the use of OCW in courses and by students ((extent and nature))
- What is the use (extent and nature) of Online Tools/materials /experiences to address particular learning outcomes e.g Stellar, Star
- What is the use of online collaboration tools e.g Wikis
- What is the use of online tutoring technologies e.g OLI
- What is the impact of social media e.g Facebook
- What is the impact of small, light devices e.g smartphones, pads
- What is the Use of Tech Enabled pedagogies/impact
  - Active Learning
  - Team-Based/PBL

Sources:
- Faculty survey; IS&T/Academic Computing/ACCORD Survey
- Subject Evaluation data
- Possible new Survey
- Student Focus Group; (ABKlein; Survey)
- Faculty Focus Group including Macvicars
- OCW data
- OEIT reports
- COFHE data

B. External and Internal examples of change in education to understand best practices
- Environmental Scan
  - CMU (OLI)
  - Harvard Medical School
  - Stanford
  - Duke
  - Berkeley
  - MIT (TEAL and CDIO, 6.01, iLab, active learning, HyperStudio)
    - What experiments have we undertaken in this direction and what have we learned from them?
    - What opportunities have we missed?
- MITCET will run a faculty focus group and a student focus group to get faculty and student input. Each group will be given the following statement

The Provost has asked the MIT Council on Educational Technology (MITCET) to address opportunities to integrate online and other technology-enabled tools into the residential campus and classroom experience with the focus on improving the learning of our students.

As part of our investigation, we are asking members of the MIT community to share with us their thoughts about what MIT could be like if our residentially based education changed to more thoroughly integrate information and communication tools:

1. What opportunities are there for significant change in the delivery of MIT education?
2. Can you envision ways in which the MIT educational experience at MIT could be very different for students and faculty?
3. What values of MIT's culture could be strengthened through the changes you foresee? What risks should be avoided?

A and B will enable MITCET to clearly define the current state of teaching and learning at MIT as well as internal and external best practices for bringing educational change at institutions of higher learning.

**Elements forcing change**

**C. Changing demographics, capabilities and expectations**
- Freshman student demographics
- Expectations of incoming freshmen based on their High School experience
- Mobile device capabilities and their use
- Use of software applications and online resources available
- Use of OCW internally

**D. Summary of Research/Understanding on contemporary Learning (Science/Engg; On-line; Distributed).**
- Literature Summary
- Invited Presentations
- TLL Presentation

C and D will enable MITCET to define an up to date understanding in the context of an understanding of learning.

**Identification of future vision in the context of understanding the stakeholders**

**E. Identification of the stakeholders and clear statement of their stakes**

**F. Visioning**
- Definition of desired future state in the context of improved learning for a residentially based education
- Identifying potential (real) Opportunities for MIT education through Educational Technology
- Identifying Risks
- Articulating areas for experiments.

E and F will enable MITCET to identify a future desired state in the context of the relevant stakeholders.

**Change paths**

**G. Introducing Changes**
- Understanding the need for change within the context of a political and cultural analysis of education at MIT (three lenses approach)
- Reporting and Communicating with faculty
- Developing Recommendations for Institutional experiments, initiatives and resources

G will enable MITCET to make recommendations that have some chance of being accepted by the faculty.
Detailed work plan for MITCET

Two faculty focus groups will be used
  1) UG officers
  2) MacVicars

Two student focus groups will be run. One by the UA Senate and one by the GSC

A wiki has been set up and is now collecting information
https://wikis.mit.edu/confluence/display/MITCETHLP

Timetable for monthly meetings of MITCET

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<tr>
<td>Data Collection on Teaching/Learning landscape; TLL presentation; Focus groups A &amp; B &amp; D</td>
<td>Environmental Scan; Visits Summarized; Stakeholder identification B&amp;C&amp;E First pass on vision F</td>
<td>Visioning Process Addressing important issues/desired value Second pass on vision F</td>
<td>Visioning Process Identifying Opportunities And Experiments Third pass on F</td>
<td>Outreach to Faculty inc MacVicars G</td>
<td>Outreach and Ureach G</td>
<td>Report review</td>
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The nominal agendas for the first three meetings are

Agenda for October meeting
  1. TLL Presentation on effective learning
  2. Data on state of teaching and learning at MIT
  3. Possible interactions with SUTD
  4. Focus Group review
  5. Report from the other two groups
  6. How shall we allocate the resources which we have been given?
  7. Preliminary collection of ideas

Agenda for November meeting
  1. Lessons learned from MIT (TEAL, 6.01, iLab, CDIO, HyperStudio)
  2. Report from the other two groups
3. Summary of visits
3. Preliminary thoughts on directions

Agenda for December meeting
1. Report from the other two groups
2. Visioning of future state
3. Second pass on directions
4. Preliminary report to the Provost
**Preliminary ideas on directions for MIT**

1. The ability to keep up with MIT courses if away from MIT
2. The ability to do four years of Concourse – an integrated science and humanities education for a cohort
3. Allow several different styles of learning going through MIT with deeper and more refined contact with individual students
4. Pre-preparation; making lab time more efficient
5. Personalization; every student has a personal tutor from among the academic and research staff. Thus a wider educational role for many
6. Making much more effective use of shared materials
7. More personalized interaction with other students and a faculty mentor around learning objectives
Other MITCET activities for the year

Learning Management Systems
MITCET has asked IS&T to do two studies this AY

Athena Spaces and Computing
MITCET will set up a committee to think through the space uses of the Athena clusters