Making It Happen: How to successfully plan, develop and realize an active learning space in your college

(slides are based on renovations of Dawson physics labs: 2008-2010)

Chris Whittaker
Dawson College

1- Background:

- Dawson has about 10,000 students

- Science Program has about 2100 students

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- Science Program has about 2100 students

- Physics Dept.
  - has about 15 FTE teaching positions
  - 4 dedicated teaching labs
  - 2 full-time technicians
  - offer daytime, evening and summer classes.

Background:

- In summer 2009 Dawson Physics Dept renovated two of four labs for active teaching.

  - Process started in winter 2008

  - College willing to spend $$$ - Jan. 2008

  - Road-trip in June 2008

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- Dawson administration has agreed to renovate a general classroom in January 2012 for active teaching – design & planning in progress.

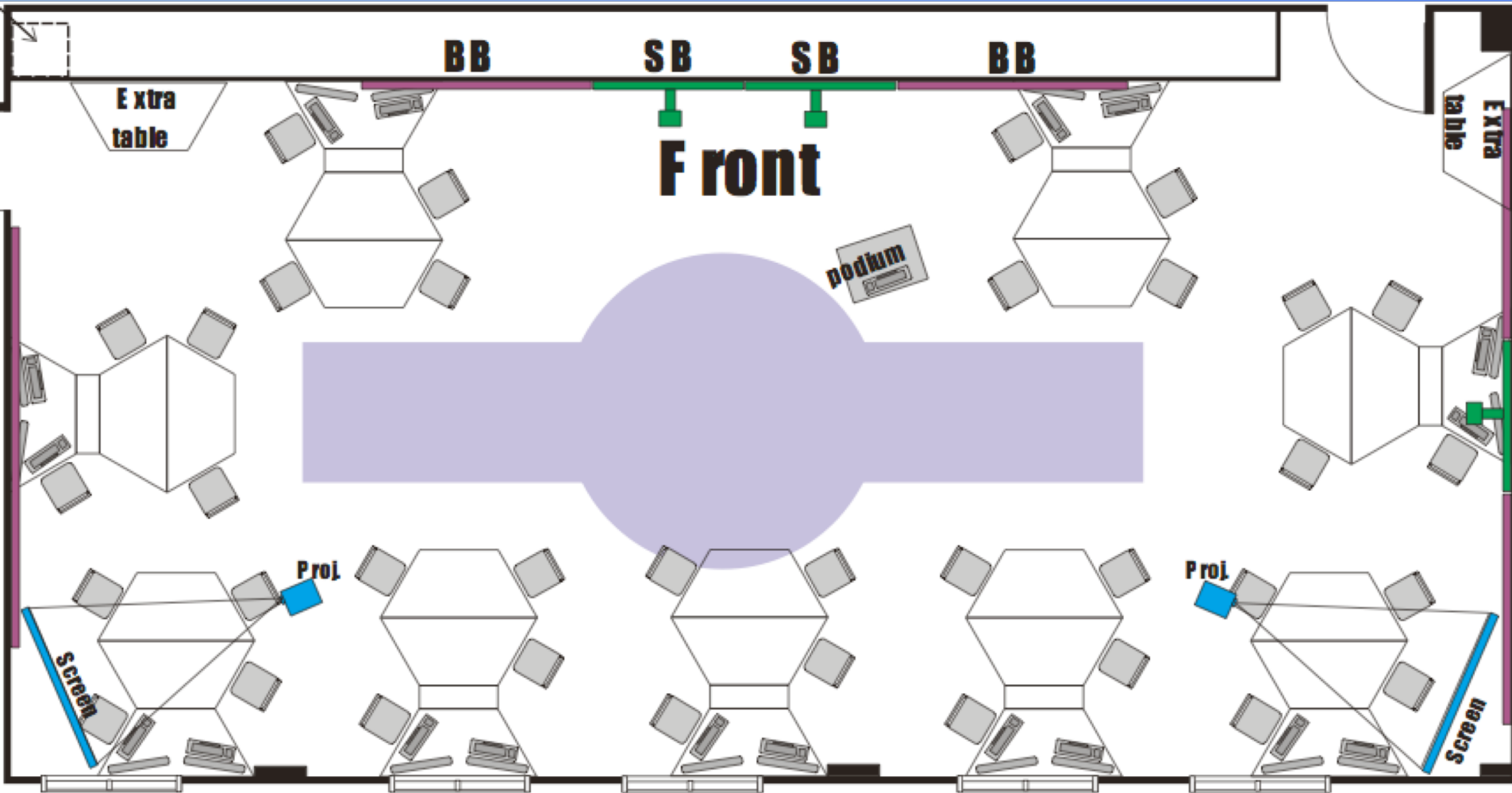# Background – Labs before renovation:

Background – Labs *after* renovation:

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Process - Overview:

1. Consultation & Expansion

2. Refinement & Design Details

3. Planning & Supervision of Renovation Work

Process Overview:

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   o Expand people's minds

   o Make theory *real.*

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     See what others have done:
     1. Review web & literature
     2. Road-trip
        - 3 day road-trip to
          - Harvard
          - MIT
          - Dickinson College
        - 3 teachers + 2 technicians

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   - Make theory *real.*

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   1. Review web & literature
   2. Road-trip
      - 3 day road-trip to
        - Harvard
        - MIT
        - Dickinson College
      - 3 teachers + 2 technicians
      - Produced report
        - ***Make it nice***

Physics Lab Roadtrip Report

Sept 12, 2008

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PHYSICS LAB MODERNIZATION WORKING DOCUMENT – (DEC.12, 2008 VERSION)

✛ **PRIORITIES**

#		
1.	Our labs must continue to allow us to schedule courses as we presently do;	
2.	Our labs must be designed so that their setup is flexible and facilitates an increased variety of pedagogical approaches. While the lab room arrangement should not be changed on a regular basis (certainly not several times per day) the time for changing the basic setup should not exceed 30 minutes;	
3.	Lab setups must include arrangements that facilitate group work as well as hands-on activities and experiments;	
4.	Students must be able to work in small groups, including groups of 2 students that have effective access to a networked computer;	
5.	Equipment storage must be efficient, effective and allow for easy access to equipment in a way that minimizes class disruptions. Minimal storage of equipment in the classroom was seen as desirable. The addition of a small storage room in-between 7A.7 and 7A.9 was seen as a good option.	
6.	There must be effective space for demonstrations in the labs but this space need not be fixed – it may be in the form of a movable cart or an adaptable desk (like at Dickinson College).	

Process Overview:

1. Consultation & Expansion

2. Refinement & Design Details
   - o Build list of "wants", then prioritize them
   - o Build design around your priorities
   - o Build a mock-up.

Process Overview:

1. Consultation & Expansion

2. Refinement & Design Details

3. Planning & Supervision of Renovation Work
   o Plan around your realities (summer classes etc.)
   o Build good relationships – eng., supv., workers
   o Be on site when work happens.

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1. Small Working Group – doers

2. Department or Program – deciders

3. Large working group – everyone

4. Administration – purse-holders

5. Plant & Facilities – renovators

6. Specialists - consultants

Process Details:

Want to **engage** the right people in a **controlled process** that is focused on **common goals and priorities**.

1. Small Working Group – doers
   - Core group of 4-6 people
   - Do most of the development work based on the decisions made by the larger group(s)
   - Including technicians here was very important
   - Most of Working Group went on *road-trip*.

Process Details:

Want to *engage* the right people in a *controlled process* that is focused on *common goals and priorities*.

1. Small Working Group – doers

2. Department or Program – deciders

   o It is important to make it clear where the decision making is made – for us that was the Physics Dept.

   o Dept. set priorities and approved design.

Process Details:

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3. Large working group – everyone
   o It is important that everyone hears directly from all involved in the process
   o Bring together different ideas and positions

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   o Need to work with admin. behind the scenes to make sure that you know what is possible and when it has to be done.

   o Need to have admin participate in larger process to understand and engage in it.

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   o They need to understand WHY things are being designed the way they are

   o Collaboration is VERY important

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3. Large working group – everyone
4. Administration – purse-holders
5. Plant & Facilities – renovators
6. Specialists – consultants
   - Some groups have a valuable perspective to contribute – ex. flexible design

Strategy:

- Planned change in <u>GRADUAL STEPS</u> – less threatening

- Set <u>DESIGN LIMITS</u> early

- <u>FLEXIBILITY</u> – THE ace up our sleeve

Strategy:

- Planned change in **GRADUAL STEPS** – less threatening
  - o Initially, I wanted to change all labs (= mistake)
  - o Not everyone wants an active learning space
  - o Some people aren't sure what they want
  - o Some aspects of design may *evolve.*

Strategy:

- Planned change in <u>GRADUAL STEPS</u> – less threatening

- **Set <u>DESIGN LIMITS</u> early**
  - o Need to be aware of different agendas
  - o Don't let everyone decide everything – need to carefully control decision making.
  - o Don't ask for something you don't want!
  - o Example: ***class size***

Strategy:

- Planned change in GRADUAL STEPS – less threatening

- Set DESIGN LIMITS early

- **FLEXIBILITY** – *THE* ace up our sleeve
  - o Flexibility in design: accommodate everyone
  - o Flexibility in process: know when to change

END