eLFAsia 2013
Thursday 30 May, 1.45
AAB504  Session 3E

eLearning & Evidence Based Practice

Dr Terry Quong
Jockey Club Ti-I College
www.tic.edu.hk
This is a story about ... asking teachers to collect & use data as evidence for improving learning.
Declaring my interest
Welcome to Effective Educational Leadership

Course Objective:
This module has been designed with the belief that learning must lead to praxis. During the 13 sessions, students will be introduced to a range of different theories about educational leadership through the practical lens of the focus question “What are the capabilities, practices, knowledge and skills of effective educational leaders?” Effective educational leadership is defined in terms of achieving school improvement in terms of student outcomes. Students will be asked to develop a Personal Leadership Charter that informs their ‘real’ practice as school leaders, as well as explore in depth through literature research aspects of educational leadership introduced in this course.

Important Announcements
1. Easter Greetings to you all. I hope your studies and careers are flourishing and you have time to laugh. I am taking a term off teaching but hope to recommence in 2014.

SHARE YOUR IDEAS ON OUR FACEBOOK
www.facebook.com/drterrencequong
Online SMART eLearning appropriate use?

- eLearning that does something we couldn’t do better before, or something that improves student outcomes, or just saves teacher’s time (and therefore gets ‘buy-in’).
Can eLearning be used to enhance student outcomes through evidence based practice?

JCTIC has used open source PHP (hypertext preprocessor software) & the community database system MySQL to develop a dynamic website that makes evidence based practice a reality.
eLearning: Two Systems

Assignment
Performance Index (API)

Students & parents can monitor work performance & improvement daily with API online

Quiz Management Index (QMI)

Students & parents can monitor their progression towards achieving learning outcomes online - The QMI is a measure of the students’ attainment and improvement over time.
**Assignment Performance Index**

### Teachers enter data

- **Log-on**
- **Select the class from drop down list** e.g. Chemistry
- **Select Assignment** (from drop-down list OR enter title of assignment)
- **Select due date** (drop-down)
- **Click the relevant box against students name including fields**

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```plaintext
please press the update button at the bottom after any modification.
```

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<thead>
<tr>
<th>Subject</th>
<th>Chemistry</th>
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<tbody>
<tr>
<td>Class</td>
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</tr>
<tr>
<td>Group</td>
<td>Chemistry F4 X1</td>
</tr>
<tr>
<td>Name</td>
<td>Experiment Workbook - Activity 14.3</td>
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<tr>
<td>Due Date</td>
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<table>
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<th>Class No</th>
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<th>Late</th>
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<td>LI PIK HEI</td>
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<td>14</td>
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</tr>
<tr>
<td>4C</td>
<td>20</td>
<td>TSUI SUNG LING</td>
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## Quiz Management Index

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<thead>
<tr>
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<th>Chemistry</th>
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</thead>
<tbody>
<tr>
<td>Class</td>
<td>4</td>
</tr>
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<td>Chemistry F4 X1</td>
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<tr>
<td>Quiz Name</td>
<td>Quiz 9</td>
</tr>
<tr>
<td>Quiz Date</td>
<td>05-03-2012</td>
</tr>
<tr>
<td>Full Mark</td>
<td>34</td>
</tr>
<tr>
<td>Average</td>
<td>16.6</td>
</tr>
</tbody>
</table>

**Class Message:**
Content of Quiz: Unit 13 Corrosion of Metals and Their Protection; Unit 14 Acids and Alkalis (part)

**Sent From:**
Teacher(tic-ckl@tic.edu.hk)

<table>
<thead>
<tr>
<th>Item Class</th>
<th>Class No</th>
<th>Name</th>
<th>Absent</th>
<th>Marks</th>
<th>Comment (optional)</th>
<th>Email Addresses</th>
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<tr>
<td></td>
<td>4A 7</td>
<td>LEUNG KA FUNG</td>
<td></td>
<td>30</td>
<td>Good work! Keep it up.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4A 9</td>
<td>LI PIK HEI</td>
<td></td>
<td>19</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>4A 11</td>
<td>LO TAK YU YUBIE</td>
<td></td>
<td>16</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>4A 22</td>
<td>LAW SHU KAI</td>
<td></td>
<td>15</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>4A 23</td>
<td>LEE LONG HEI</td>
<td></td>
<td>10</td>
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</tr>
<tr>
<td></td>
<td>4A 27</td>
<td>SUEN TSZ HIN</td>
<td></td>
<td>17</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>4B 2</td>
<td>CHAU TSZ CHING</td>
<td></td>
<td>8</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>4B 30</td>
<td>CHUNG SIU CHUN</td>
<td></td>
<td>13</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>4B 32</td>
<td>TAI JEFFREY WING CHEONG</td>
<td></td>
<td>19</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>4C 1</td>
<td>CHAN LOK LAM</td>
<td></td>
<td>12</td>
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<td></td>
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<tr>
<td></td>
<td>4C 2</td>
<td>CHAN WING SZE</td>
<td></td>
<td>9</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>4C 14</td>
<td>PAU CHAK WA</td>
<td></td>
<td>23</td>
<td>Steadily progressing. Good work.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4C 20</td>
<td>TSUI SUNG LING</td>
<td></td>
<td>18</td>
<td>Improvement shown. Keep it up.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4D 1</td>
<td>CHAN FONG YUEN</td>
<td></td>
<td>22</td>
<td>Good result. You can still do better.</td>
<td></td>
</tr>
</tbody>
</table>
If a student’s API falls below standard the system auto notifies & a letter is sent to parents from principal.
Why is this Appropriate Tech?

School Leaders need data and evidence to make the decisions needed to enhance student learning. Parents & students need data to set goals and monitor improvement. Teachers need data to plan and shape their plans, programs and interventions.

Teachers are busy people, the process of collecting, inputting and analysing data is problematic unless there is a clear benefit to students & they can see that the process is doable.
Summary

The implementation of the eLearning API and QMI systems over three years has greatly enhanced the school’s effectiveness in terms of its commitment to formative and summative assessment, the improved use of feedback to students, parents and feedback to teachers, enhanced ability for students (student-centred learning) to set their own outcomes and for teachers to review and set appropriate learning targets, and importantly the API and QMI have greatly enhanced the role of parents as partners in student learning.

Dr Terry Quong: principal@tic-edu.hk
Sample Teacher PD

In 5 mins come up

1. *What I can learn from this narrative*
2. *What “Q” should have done*

Facebook Friends & Sexting
Dr M is a friend of mine

1. Barry has a Facebook and invited his lecturer M to be his ‘friend’
2. Barry (19) is a ‘nerd’ with a girlfriend (15).
3. Barry’s girl sent him a photo of her with no clothes via WhatsApp (SEXting).
4. She later dropped Barry, who spitefully posted the photo on his Facebook
5. M saw the photo on his facebook but did not ‘like’ or comment.
6. Police came to the uni to interview M.
7. Police interviewed M’s Department Head.

Facebook Friends & Sexting
Extras
Assignment Performance Index

The API program automatically calculates the index and uploads it to the student’s online file. Students and parents can access ‘just in time’ information about performance from at any time. A group or class report is also generated and provided to the teacher and school administration.
Assignment Performance Index

Comparing the Average API in the 1st Term of the Past 3 years.

<table>
<thead>
<tr>
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<th>2012-13</th>
<th>2011-12</th>
<th>2010-11</th>
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<tbody>
<tr>
<td>F.1</td>
<td>6.35</td>
<td>7.24</td>
<td>5.68</td>
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<tr>
<td>F.2</td>
<td>11.04</td>
<td>11.25</td>
<td>12.21</td>
</tr>
<tr>
<td>F.3</td>
<td>5.80</td>
<td>9.73</td>
<td>10.22</td>
</tr>
<tr>
<td>F.4</td>
<td>6.63</td>
<td>9.32</td>
<td>7.51</td>
</tr>
<tr>
<td>F.5</td>
<td>7.96</td>
<td>9.25</td>
<td>12.83</td>
</tr>
<tr>
<td>F.6</td>
<td>8.06</td>
<td>5.78</td>
<td>5.24</td>
</tr>
<tr>
<td>F.7</td>
<td>---</td>
<td>6.44</td>
<td>9.44</td>
</tr>
<tr>
<td>Overall</td>
<td>7.64</td>
<td>8.66</td>
<td>9.02</td>
</tr>
</tbody>
</table>
Assignment Performance Index (API)

Every student has formative work requirements (e.g. homework, projects, essays). The API is a measure of students’ formative work. It is an indicator based on how much work is completed satisfactorily and on time. Data is collected on each of the 1,100 students. The API Index provides information on the individual student, on groups & cohorts of students.

API Scores Range
- 0-10  Excellent
- 11-20  Comprehensive
- 21-30  Developing
- > 30   Problematic
**Quiz Management Index**

Every student has summative assessments (e.g. quizzes, projects, etc). QMI is an indicator of students’ attainment and trend data on improvement.

QPI gives information on the overall performance of an individual student in summative assessment as a ‘single’ figure indicator. Information is also generated on cohorts and classes.

\[
\text{QPI} = \sum \frac{\text{Quiz Mark}}{\text{Full Mark}} \times 100
\]

\[
\frac{\text{Quiz Mark}}{\text{Full Mark}} \times 100
\]
Quiz Management Index

A QPI value of ‘50’ is a ‘passing’ standard. There is a “Subject QPIs” and “Overall QPI”.

Students are now able to set learning targets (i.e. target QPI required to ‘pass’ HKDSE within a subject)

Teachers are now able to chart student improvement and provide feedback

Parents can monitor progress daily.

**Emails** containing quiz results and QPI can be automatically generated and sent to individual students and parents.
Findings

eLearning enables evidence based practice because:

• Teachers can enter data easily to API and QPI – estimate ‘save’ teachers up to 3 hours per week.
• Teachers are now supported by the Administration in contacting parents of low motivated students (poor API).
• The analysis of trends in performance over time (projections & predictions on student attainment) is now possible that was not available before.
• The school administration uses the API and QPI data to target intervention support where needed (e.g. Low API of a class lead to intervention by VP and Counseling team as well as changing class composition).
Why eLearning?

Teachers will save 3 hrs pw
Student motivation will NO longer be the teacher’s responsibility only
Parents can access ‘real’ time student work & improvement evidence
Students can set individual improvement targets
School leadership can direct intervention programs or other changes
What is Evidence Based Practice?

Use of data ▶️ Enhanced student outcomes

The process in which schools collect and use their own data to make informed decisions about how to improve teaching and learning. Such evidence can be used to make informed decisions about intervention programs, the effectiveness of policies and teaching practices, and to inform and guide students themselves in achieving their own learning targets.
How is eLearning defined?

elearning refers to the use of digital media and ICT in education.

This paper focuses on the use of ICT to enhance student learning through the use of intranet, website and online data base systems to facilitate evidence based practice in teaching & learning.
The system

A **dynamic website system** (*dynamic = database working at ‘backend’ to support handling of data*)

The software tools we use are:

**Web Server:** Apache Web Server running on Linux OS
**Database Engine:** MySQL
**Web programming language:** PHP (Hypertext Preprocessor)
**Integrated Website Development Environment:** Adobe Dreamweaver
The system

Processor: Intel Xeon processor
RAM: 16 GB ECC Ram
Hard Drives: 4 hard drives running in RAID-5 mode (reduce hard drive failure and provide speed)
Network Interface: Dual gigabit ports with redundant bandwidth
Power Supply: Dual power supply for redundant power protection
The infrastructure

- Full Gigabit ethernet network with fibre backbone for whole campus
- 100 Mbps full-duplex symmetrical broadband connection (HGC)
- 3 equipped Computer Rooms with 40 workstations (1 @ 20)
- Special rooms equipped with sets of high end PCs for photoediting, video editing, & design.
- All 52 classrooms; projector, computer & connection systems
- LDAP managed Single sign-on for all users Intranets, Emails, etc.
- Self-developed Staff, Student, Parent and Alumni Intranets
- E-Learning System – EClass
- All teachers & TA have notebook or desktop computer.
- Blog Management System for all students and staffs
- Domain network managed by Windows Server 2003R2
- FTP, Email and web hosting services
- Email filtering services for all users
- Linux-based SUN firewall guarding the whole school network