Introduction

The purpose of this study:
- To examine whether the Modified Blended Team-Based Learning (BTBL) developed by Victoria University (VU) can be generalized and applied in Hi-Diploma (HD) course of the School of Professional and Continuing Studies (SCS).
- Share with colleagues
  - The research findings
  - BTBL teaching experience

Victoria University (VU) Australia
- One of SCS business partners
- Co-operates with SCS jointly introduce top-up degree programme in Hong Kong.¹
- Introduced a new series of courses, called Professional Development (PD1, PD2, PD3), in the top-up degree programme in fall 2009.

¹. [http://www.scs.cuhk.edu.hk/](http://www.scs.cuhk.edu.hk/)
Blended Team-Based Learning (BTBL)

The PD1 course is designed in form of BTBL including a number of carefully-chosen class activities (optimal teaching mix) for the propose of:

- Acquiring knowledge
- Identifying personal attributes
- Developing professional skills.


Optimal Teaching Mix

Class activities (assessment):

- Readiness Assurance Test (RAT)\(^1\) [BC, IC][G, I]
- Critical Reading and Writing [BC, IC][I]
- Self-reflection [AC][I]
- Short case study [IC][G]
- Long case study [BC, IC, AC][G]
  - presentation & report

BC = Before-class preparation
IC = In-class
AC = After-class
G = group activity
I = individual activity

One of their courses, ‘Corporate Governance and Ethics’ (CGE), is taught using modified BTBL

- Modified \(\Rightarrow\) localized to HD students

Blended Team-Based Learning (BTBL)

Student is required to:

- **Work in team** most of the time except individual activities
- **Be punctual** and well time-managed as all the activities have tight schedule
  - Mark will be deducted for late submission
  - Zero mark for anyone absent in class activities
- **Free-rider problem in teamwork**
  - Peer evaluation
  - Teacher evaluation of individual performance in teamwork

Background

The HD of Corporate and Business Information System (CBIS) students are chosen to participate in this study.

One of their courses, ‘Corporate Governance and Ethics’ (CGE), is taught using modified BTBL

- Modified \(\Rightarrow\) localized to HD students

Background

- The reason of choosing CGE course
  - The concept of CGE is relatively profound to HD students
  - Traditional Teaching Learning (TTL) approach was found difficult to achieve desired learning outcome, i.e.
- To demonstrate and apply the knowledge of CGE
- To evaluate and criticize the CGE of an enterprise

Modified BTBL

A quick lecture is delivered teaching student CGE concept before class activities

<table>
<thead>
<tr>
<th>Class activities</th>
<th>BC</th>
<th>IC</th>
<th>AC</th>
<th>G/I</th>
<th>From</th>
</tr>
</thead>
<tbody>
<tr>
<td>Readiness Assurance Test (RAT)</td>
<td>x</td>
<td>x</td>
<td></td>
<td>G/I</td>
<td>VU</td>
</tr>
<tr>
<td>Critical Reading and Writing</td>
<td>x</td>
<td>x</td>
<td></td>
<td>I</td>
<td>VU</td>
</tr>
<tr>
<td>Self-reflection</td>
<td></td>
<td>x</td>
<td>I</td>
<td></td>
<td>VU</td>
</tr>
<tr>
<td>Short case study [Poster presentation]</td>
<td></td>
<td>x</td>
<td>G</td>
<td></td>
<td>Modified</td>
</tr>
<tr>
<td>Long case study [presentation &amp; report]</td>
<td>x</td>
<td>x</td>
<td>G</td>
<td></td>
<td>VU</td>
</tr>
<tr>
<td>Online presentation [video recording]</td>
<td>x</td>
<td>x</td>
<td>G</td>
<td></td>
<td>New</td>
</tr>
<tr>
<td>Short quiz</td>
<td>x</td>
<td>x</td>
<td>I</td>
<td></td>
<td>New</td>
</tr>
</tbody>
</table>

BC: Before-class preparation
IC: In-class
AC: After-class
G: Group activity
I: Individual activity
VU: Victoria University
New: newly added
Modified: VU + new

Research questions

- Major research question
  - Can the modified BTBL approach be generalized and applied in the HD course of SCS in improving the learning outcome?

Research aims

- To show that the Modified BTBL be generalized and applied in the HD course of SCS in improving the learning outcome.
Research objectives

- To show that the learning outcome of SCS HD course is influenced by the individual class activity $[i]$ of modified BTBL, where class activity $[i]$ is
  - Readiness Assurance Test (RAT)
  - Critical Reading and Writing
  - Self-reflection
  - Short case study
  - Long case study
  - Online video presentation
  - Quiz

- To show that the learning outcome of SCS HD course is influenced by the BTBL teaching mix of class activities

Research objectives

- Testing hypothesis $[i]$ for $i = 1 - 7$
  - H0 (Null hypothesis): The learning outcome is not influenced by individual class activity $[j]$.
  - HA (Alternative hypothesis): The learning outcome is positively influenced by individual class activity $[j]$ compared to traditional teaching learning (TTL), where class activity $[j]$ is
    - [A1] Readiness Assurance Test (RAT)
    - [A2] Critical Reading and Writing
    - [A3] Self-reflection
    - [A4] Short case study
    - [A5] Long case study
    - [A6] Online video presentation
    - [A7] Quiz

Research objectives

- Testing hypothesis 8
  - H0: The learning outcome is not influenced by BTBL teaching mix of all class activities.
  - HA: The learning outcome is positively influenced by BTBL teaching mix of all class activities compared to traditional teaching learning (TTL).

Research methodology

- Sample size
  - 30 students
- Sampling method
  - Convenient sampling
- A longitudinal study (quantitative)
  - The students attend two courses of different teaching learning approaches, i.e. BTBL and TTL
- Testing instrument
  - An attitude survey questionnaire contains close-ended questions (Likert Scale) and open-ended questions
- Data analysis
  - Step 1: chi-squared test
    - test significant relationship
  - Step 2: z-statistics test
    - test positive relationship
Research results

Student's perception on the usefulness of class activity

<table>
<thead>
<tr>
<th>Class activity</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Readiness Assurance Test (RAT)</td>
<td>3.9</td>
</tr>
<tr>
<td>Critical Thinking &amp; Writing</td>
<td>3.9</td>
</tr>
<tr>
<td>TBL - Think, Brain, Learn</td>
<td>3.9</td>
</tr>
<tr>
<td>Short case study &amp; video presentation</td>
<td>4.1</td>
</tr>
<tr>
<td>Differentiation</td>
<td>4.0</td>
</tr>
<tr>
<td>Quiz</td>
<td>4.1</td>
</tr>
</tbody>
</table>

The Reason of Student prefer TBL to TTL

<table>
<thead>
<tr>
<th>Reasons</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>More flexibility</td>
<td>4.1</td>
</tr>
<tr>
<td>We prefer TBL</td>
<td>4.0</td>
</tr>
<tr>
<td>TBL limits</td>
<td>3.9</td>
</tr>
<tr>
<td>No real exam</td>
<td>3.9</td>
</tr>
<tr>
<td>TBL helps us think more than just knowledge</td>
<td>4.1</td>
</tr>
</tbody>
</table>

Student's perception on the learning outcome from TBL

<table>
<thead>
<tr>
<th>Learning outcomes</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge</td>
<td>25</td>
</tr>
<tr>
<td>Presentation</td>
<td>20</td>
</tr>
<tr>
<td>Team work</td>
<td>15</td>
</tr>
<tr>
<td>Incentive and passion</td>
<td>10</td>
</tr>
</tbody>
</table>
Data analysis [step 1]

- Chi-squared test ($X^2$)
  - To test whether there is a significant relationship between BTBL teaching mix and learning outcomes

The calculated Chi-squared value:
- $X^2_{\text{calc}} = 45.737$ with 30 degree of freedom
- Area in upper tail
  - $X^2_{0.05} = 43.77 < X^2_{\text{calc}} < X^2_{0.025} = 46.98$

The decision is:
- Reject H0 (null hypothesis) that there is no association between BTBL and learning outcome.

The conclusion is
- There is a significant association between the BTBL teaching mix and learning outcomes at the 5% level of significance.

Data analysis [step 2]

- z-statistics test
  - To test whether the learning outcomes are positively influenced by individual class activity compared to traditional teaching learning (TTL)
  - To test whether the learning outcomes are positively influenced by BTBL teaching mix of all individual class activities compared to traditional teaching learning (TTL)
Data analysis [step 2]

- The conclusion:
  - The learning outcomes are not influenced by individual class activity A3, A6, A7.
  - The learning outcomes are positively influenced by individual class activity A1, A2, A4, A5 compared to traditional teaching learning (TTL)

- The learning outcomes are positively influenced by BTBL teaching mix of all individual class activities compared to traditional teaching learning (TTL) at the 1% level of significance.

Conclusions
- The modified BTBL teaching mix is applicable in SCS HD course
  - +ve influence on the learning outcome
- Ultimately, students can, not only be benefited from knowledge acquisition, but also apply the knowledge and reflect themselves.
  - According to SOLO Taxonomy (Biggs & Collis), student responses reach 4th or 5th SOLO level, i.e. “Logically related answer” or “unanticipated extension”, if and only if he/she is engaged in all the class activities of BTBL

Contribution of research findings
- The research opportunities, for example:
  - The issues of BTBL: free-riders, quality assurance, classroom culture.
  - The BTBL instructional design and its alignment with the learning outcome as perceived by students
  - The impacts of IT on BTBL.
- Share with colleagues the innovative BTBL
Limitations of research

- Small sample size
  - not representative
- Research findings based on the student perception only
  - No validation from senior staffs or in-depth interview
- Convenient sampling
  - Non-probability sample method

Future research

- Stage 1:
  - A similar study will be carried out for different courses in order to test if this BTBL be generalized and needs localization in certain areas.
- Stage 2:
  - A comparison study of the impact of cloud computing on traditional teaching learning and BTBL: Is it complementary or redundant with respect to e-learning software platform?

Future plan

- The major objective in teaching:
  - to achieve and maximize the learning outcome of students.
- What I need to do as a teacher:
  - Keep examining the effectiveness of current teaching approach on HD courses
  - Keep evaluating the appropriateness of different teaching approach on HD courses
  - Keep attending professional development courses in teaching provided by CLEAR (if time allowed :P)
  - Exchange the teaching experience with other institutions like Victoria University Australia
  - Keep updated from literatures and articles

Thank you!

- If you have any enquiries, please kindly contact me by email or phone.
- If you are interested in this research, please contact me for details.
- I am looking forward to any collaborative research opportunities with you.

Contact:

- Email: louis.lam@cuhk.edu.hk
- Tel.: 2781-0114
- Office: Rm1501, 15/F, Mongkok Learning Centre, 90A Shan Tung Street, Mongkok, Kowloon, HK