The Importance of Time Budgeting for Online Learning
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ABSTRACT
Web-based online learning and teaching is an interesting and debatable issue for many teachers and learners. It is natural and reasonable to research, compare, question and argue the different aspects of this technological approach. There is one particular aspect this article focuses on, that is the importance of time budgeting for online learning. The article was written based on the data analysis for an online training course “Online Teaching – Introduction and Basic Practice” conducted by Østfold University College in September 2001. The course was primarily designed for university and college professors and teachers. The intention is to introducing an example of web-based online learning and teaching solution for them, so motivating them to practice their own teaching courses online. There are a number of problems observed during the course and a high drop-off percentage was presented and discussed. The data analysis and a summary of feedback indicate however a trend of time budgeting or resource related reasons, not technique or course issues. The study concludes a fact of online learning and teaching is rather a free option of course offers, not a “free lunch” or an easy solution for anyone. It is important and necessary to provide sufficient time budgeting for this new learning style and method.

KEY WORDS
Web-based online learning, data analysis, time budgeting.

1. INTRODUCTION
Online teaching and how are the popular and debatable topics for academics staff and researchers. Many papers were written and many issues were addressed, as learners’ distressing experience online and technical difficulties [1], personal interactions [2], tutoring systems [3] and measurable metrics [4], etc.

These topics are both relevant and experienced through online course conducting at Faculty of Engineering and Natural Sciences at Østfold University College, though the college has many online courses offered [5] currently.

This paper will reveal and discuss some of the relevant issues throughout a particular online course conducted for the college teacher staff. The course was designed for the college teacher staff and it is named “Online Teaching – Introduction and Basic Practice” or “Nettbasert undervisning” in Norwegian, termed as NBU here after.

2. COURSE DESCRIPTION
This NBU course was conducted throughout the period from 24. September to 12. October 2001. The total course duration was 3 weeks, with estimated 1 - 3 hours online activities every day required for each participant throughout the course period.

The Course Content
The course consists of 6 modules, heading with following topics for each module:

- Getting familiar with courseware and basic program functions.
- Learning process – a basic and theoretical discussion about learning models.
- Online teaching – different approaches and contents, and invited online lectures.
- In a virtual classroom – how would online students experience an online course?
- In a virtual classroom – special challenges and requirements for an online teacher.
- Online evaluations – how should an online teacher evaluate his/her students online?

A vital principle that we have applied throughout course conducting was assignment duties for each course participant. There are totally 8 written assignments available throughout course conducting and the minimum duty for each participant was 5. In addition, there is also an optional exercise for synchronous online communication conducted. We consider these assignments and exercise as a vital part of our course conducting, because we believe an online teaching or learning process can only be accomplished successfully throughout the duplex communications and practical works.
The Process of Course Conducting

Two online instructors were assigned for course conducting. The intention of this approach is creating a learning environment online in these aspects:

- Providing technical supporting in time (two are always better than one)
- Presenting different teaching style and methods (of each instructor)
- Balancing instructor’s work loading so that online communications are assured

The course was totally conducted online. This means every course activity, including course introduction, information messages, lecture materials, invited lectures, assignments and exercises, instructors’ feedback, comments, evaluations and summary of class performance were all presented online. Writing documents, messages, or notes is the basic communication method throughout the course. We were thinking about the option of visual and camera lecture transferring synchronously, but chose not applying this time. There was no face-to-face classroom meeting neither, so all the course activities were really processed remotely between the participants and instructors, online. Many would find this approach is unexpected, unusual and uncomfortable at the course beginning, compared with other traditional course conducting. However, our intention of this practice is:

- Simulating a real and “difficult” online environment so every participant is able to experience how would an online student likely feel and see during such an online course. This must be a primary experience for a participant, thus, a future online teacher to have.
- Up to now, most existing and operative online courses are still using document and writing message based communication during their course conducting. Our previous experience indicated that there are still quite few remote students following the online courses through their PC/Internet connected with analog phone lines. It is therefore important to introducing the most simple, accessible and available technology solution for our participants so that the complexity of the receiving process reduced to the minimum level.
- Providing a flexible learning environment by conducting the course asynchronously, so that every participant is able to log into our online course and follow the course progress anytime and anywhere.

Nevertheless, it was also possible for participants to receive the course instructors’ technical supports and guiding orally, through the telephone consultation when needed.

3. ANALYSIS OF COURSE ACTIVITIES

The analysis of course activities is mainly focusing on the quantity of total documents and how these documents were organized throughout the course, since the course was conducted asynchronously and the class interactions were basically occurred through document based communication.

The analysis was therefore based on the following approaches:

- Statistical surveys for the quantity and organization of course documents (the number tells a figure).
- Secondary data analysis based the participants’ own documents and messages throughout the course.

The advantages for such approaches are the reliability for data collection. Traditionally, an evaluation of class performance would be conducted through the standard questionnaires and the data collection was fully depended on the respondents’ interpretation on each question and their willingness to answer. It is not an unusual phenomenon that the interpretation was incorrect and willingness to answer was not there, and these would impact the reliability for data collection, thus, the accuracy of the data analysis.

Online course, on the other hand, would undertake data collection automatically through the class activities. During an online course, every online activity will be recorded and registered in the course database, so that it will be easy to track back these records. In a way, this is a kind of secondary data collection. However, it will be as good as primary data.

The disadvantages of such approaches, however, are lacking structure of data collection, so that data is collected randomly. This will probably make data analysis more difficult because no research question or hypothesis was asked beforehand, and large amount data is required for identifying the “latent” problems or issues.

Based on the nature of online communication, there are 2 definitions of activity performance, thus, active performance and passive performance.

Definitions of Active Performance:

- An active activity is a document or message transferred by a course participant, either by an online teacher, an online student or by an online student group.
- An active day is a day when a document or message transferring has been recorded online.
- An active student is an online student, whom is, not only participating in and read an online course's documents or messages, but also being actively sending one or more documents or messages to his/her online classmates or teachers.
We can imagine a similar situation for these definitions in a traditional face-to-face classroom. An active performance activity will then be any activity in a class, such as lecture speaking for a topic, writing a note or an equation on the blackboard, raising a question for the teacher or other classmates, etc. In a traditional face-to-face classroom, these activities will be formulated in different ways, as oral, virtual, or other communication ways, which can be easily and quickly conducted in two ways. Correspondingly, these activities are usually formulated or recorded in a writing form, as a document, a message or a note, etc. This kind of formulating will cause certain challenges in communication between online students and their teacher. However, this formulating also offers a great advantage in data collection, because every online activity was recorded and restored, automatically. This data collection approach also offers high reliability and validity for the collected data, when compared with the traditional survey questionnaire method since the information is recorded without questionnaire, so the chances for information misinterpreting or misunderstanding are also reduced drastically.

The following active performance activities are recorded in our database throughout this course:

<table>
<thead>
<tr>
<th>Activity type</th>
<th>Discussions</th>
<th>Comments</th>
<th>Assignments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total frequencies</td>
<td>25</td>
<td>35</td>
<td>12</td>
</tr>
<tr>
<td>Frequencies by participants</td>
<td>7</td>
<td>16</td>
<td>12</td>
</tr>
<tr>
<td>Involved participants</td>
<td>3</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Average freq. by participant</td>
<td>2</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Frequencies by instructors</td>
<td>18</td>
<td>19</td>
<td>0</td>
</tr>
<tr>
<td>Involved instructors</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Average freq. by instructor</td>
<td>9</td>
<td>9</td>
<td>0</td>
</tr>
</tbody>
</table>

Based on this frequency display, we can conclude the following summary for active performance activities for this course:

1. Online instructors appeared to be more active than the online participants in average frequencies for discussions (initiating questions in the online classroom, 9 vs. 2) and for comments (responding the questions in the online classroom, 9 vs. 4). Assignments were designed only for participants, so the comparison was not available for online instructors.

2. There were 3-4 participants (out of 10 registered) whom were active in doing discussions, comments and assignments.

3. Overall, the online class activities were not very high in total participation, neither so high for average frequencies for each participant.

However, this was the average level for the entire online class, so the differential efforts and performance from each participant were invisible for this account. We also collected a detailed frequency display for each participant and instructor in table II below.

<table>
<thead>
<tr>
<th>Participant</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequencies</td>
<td>1</td>
<td>1</td>
<td>15</td>
<td>4</td>
<td>14</td>
</tr>
<tr>
<td>Instructors</td>
<td>M</td>
<td>N</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Frequencies</td>
<td>7</td>
<td>30</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. Participant A and B were obviously active only once, but then seemed to drop off.

2. Participant D was moderate active, but with 4 frequencies throughout the course, the online activity performance could not be considered as a high level.

3. It was easy to notice that participant C and E was the most active online participants.

Indeed, participant C and E were the most active online participants throughout the course, and they both participated in the most online discussions and accomplished most parts of assignments.

There were only 5 participants whom participated in the course actively in the 1st week of the course (this means they sent the document or message in the course’s virtual classroom at least once). However, the other half class was not active; in fact, they were not online at all.

A comparative review with a similar online course conducted later on, in 2002 was illustrated in table III. The activity comparison shows the significant difference between these two courses. There is much higher level of online activities in table III then the activities in table II.

<table>
<thead>
<tr>
<th>Participant</th>
<th>P14</th>
<th>P12</th>
<th>P15</th>
<th>P13</th>
<th>P7</th>
<th>P10</th>
<th>P8</th>
<th>P13</th>
<th>P19</th>
<th>P3</th>
<th>P19</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequencies</td>
<td>68</td>
<td>18</td>
<td>10</td>
<td>9</td>
<td>5</td>
<td>2</td>
<td>34</td>
<td>34</td>
<td>19</td>
<td>20</td>
<td>19</td>
</tr>
<tr>
<td>Instructors</td>
<td>P1</td>
<td>P12</td>
<td>P15</td>
<td>P13</td>
<td>P7</td>
<td>P10</td>
<td>P8</td>
<td>P13</td>
<td>P19</td>
<td>P3</td>
<td>P19</td>
</tr>
</tbody>
</table>

A comparative review with a similar online course conducted later on, in 2002 was illustrated in table III. The activity comparison shows the significant difference between these two courses. There is much higher level of online activities in table III then the activities in table II.
It is easy to observe the online participants in the later 2002 course did averagely much better than their previous classmates. There could be many reasons for such a difference, the composition and professions of the participants, the backgrounds and pre-knowledge levels among the participants, the schedule or timing of course conducting, etc. The later 2002 NBU was indeed conducted toward the participants from whole Norway. The similar potential was observed in the course’s passive and read-only activities. We defined a participant’s visiting or entering to our online virtual classroom, undertaking read only, but not writing as passive performance.

**Definitions of Passive and Read-only Performance:**

- A passive or read-only activity is number of web pages in an online course that has been read or browsed by an online student. Thus, this is a definition for the online activities based on read-only category.

Every time an online student has entered an online classroom, his/her online activities will be recorded and registered by the course database. The registration will also, depends on types of courseware, be able to record this student’s "indirect" activities, for example number of web pages has been displayed on receiver’s PC screen, which can be used as an indicator for counting on number of read web pages. We can name these "indirect" activities as "passive" activities.

### TABLE IV

<table>
<thead>
<tr>
<th>For Participant</th>
<th>1st week</th>
<th>2nd week</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>30</td>
<td>3</td>
</tr>
<tr>
<td>B</td>
<td>5</td>
<td>16</td>
</tr>
<tr>
<td>C</td>
<td>242</td>
<td>163</td>
</tr>
<tr>
<td>D</td>
<td>38</td>
<td></td>
</tr>
<tr>
<td>E</td>
<td>127</td>
<td>99</td>
</tr>
<tr>
<td>F</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>M</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>P/Q/W</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Total participants** 454 281

<table>
<thead>
<tr>
<th>For Instructor</th>
<th>1st week</th>
<th>2nd week</th>
</tr>
</thead>
<tbody>
<tr>
<td>M</td>
<td>33</td>
<td>22</td>
</tr>
<tr>
<td>N</td>
<td>77</td>
<td>41</td>
</tr>
<tr>
<td>Total instructors</td>
<td>110</td>
<td>63</td>
</tr>
</tbody>
</table>

Note: This is a summary for each participant’s “passive” or read-only (in number of read web pages) activities for the 1st and 2nd week of the course (the data from the 3rd week was not available due to a technical error occurred in the data system).

In this way, we can "see" an online student's "passive" activities. A similar situation for a traditional classroom will be a student's appearance in a classroom, without asking any question or participating in any discussion during the class hours. Hence, the definition of "passive" will provide a wider content than the word itself, because we know that even that student is silent and not saying anything, it does not mean that student is not actively engaged in the course progress. That student can still be a good student and read a lot of course materials. However, by checking number of read web pages, we will be able to know that student's course engagement in this specific read-only aspect.

As we all can observe from the table, there were quite variety and differences in participant’s reading activities. Some read a lot, at least tried so, others did not read at all. Overall, we have 2 very active and 3 moderately active participants throughout this course. On the other hand, the rest of class, thus other 5 participants were either surfing based or not entered the course online at all. We may conclude that we could expect a better performance, averagely among the participants for the current course.

### TABLE V

<table>
<thead>
<tr>
<th>Participant P/Instructor</th>
<th>Frequencies</th>
<th>Participant P/Instructor</th>
<th>Frequencies</th>
</tr>
</thead>
<tbody>
<tr>
<td>P17</td>
<td>2617</td>
<td>P10</td>
<td>467</td>
</tr>
<tr>
<td>P14</td>
<td>2307</td>
<td>Instructor1</td>
<td>421</td>
</tr>
<tr>
<td>P15</td>
<td>1422</td>
<td>P6</td>
<td>360</td>
</tr>
<tr>
<td>Instructor2</td>
<td>1060</td>
<td>P8</td>
<td>288</td>
</tr>
<tr>
<td>P18</td>
<td>1056</td>
<td>P12</td>
<td>261</td>
</tr>
<tr>
<td>P4</td>
<td>977</td>
<td>Instructor3</td>
<td>213</td>
</tr>
<tr>
<td>P2</td>
<td>976</td>
<td>P13</td>
<td>186</td>
</tr>
<tr>
<td>P11</td>
<td>972</td>
<td>P3</td>
<td>155</td>
</tr>
<tr>
<td>P5</td>
<td>823</td>
<td>P9</td>
<td>135</td>
</tr>
<tr>
<td>P16</td>
<td>774</td>
<td>P19</td>
<td>50</td>
</tr>
<tr>
<td>P1</td>
<td>636</td>
<td>P21</td>
<td>47</td>
</tr>
<tr>
<td>P7</td>
<td>627</td>
<td>P20</td>
<td>3</td>
</tr>
<tr>
<td>Guest</td>
<td>576</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Total in the class** 17393

**Average pages/person** 696

The in-depth analysis of this NBU conducting shows however a participant’s motivation and engagement, and even time budgeting might be the important factors for their successful course progress.

### The Supportive Consulting

There are clearly significant differences in their activity statistics between these two courses. The following course diary (in Norwegian) illustrated the situation and the log was registered as a summary of telephone consulting services and supports, conducted by this NBU course instructors at the 1st course week:

- 23.08. En e-post til samtlige HiØ ansatte var sendt om NBU kurs med påmeldingsfrist.
- 03.09. Bekreftelse av FA-HiØ at samme melding er plassert i HiØ hovedhjemmeside og den står fram til 03.10.01.
• 17.09. Fristen gikk ut og 10 deltakere meldte seg på kurset.
• 20.09. Opplysninger om kursstart, URL adresse, brukernavn og passord var sendt til alle deltakere.
• 21.09. Lærebøker var sendt til alle deltakere.
• 25.09. Kursleder sendte en purrings e-post og ba om oppstarting fra alle deltakere.
• 25.09. Det var 3 som svarte kurslederes oppfordring, herav 1 trakk seg pga sykefravær.
• 26.09. Kursleder oppsummerte status i kursforside, og registrert at kun 3 deltakere var på nett.
• 26.09. Kursleder oppsummerte status i kursforside, nå er det 4 deltakere som var på nett.
• 27.09. Kursleder tok en ny telefonrunde til de som ikke-aktive studentene KL13.30 (4 deltakere svarte ikke/ var ikke tilstede, 1 svarte og lovte komme i gang snart. Og 1 ringte selv og spurte om hjelp og fikk det).
• 27.09. Kursleder sendte enda en e-post til samtlige deltakere om status på aktivitet og tilbud om hjelp til å komme i gang til kurset.
• 27.09. Kursleder oppsummerte status på nytt i kursforside, nå er det 5 deltakere som var på nett.
• 28.09. En deltaker sendte e-post til kursleder og fikk svar.
• 28.09. Telefonoppfølging/hjelp til en deltaker.

Basically, this diary has revealed a number of supportive activities that the course instructors initiated for their participants. There were a number of e-mails and telephone calls made to the participants to encourage them entering the course online.

Reviewing this log from the 1st course week, we can notice the following facts from the 1st week:

1. There were only half of them, thus 5 participants whom entered in the course’s virtual classroom (online).
2. There were only 3 participants initiated the questions or asking their needs for supports.
3. “Not enough time” is the most common reason for not being engaged actively in the course.

There has been observed few participants left the course after a short while or some even did not enter the course at all, though they intended to enter and so continue in this course.

Such absence has resulted consequence of frustration and negative impression for others whom were well engaged in the course, often because group work could not be carried on.

The absent participants were asked to explain why they had to leave or drop-off the course. Their reasons are listed in table VI as a summary.

<table>
<thead>
<tr>
<th align="left">TABLE VI</th>
</tr>
</thead>
<tbody>
<tr>
<td align="left"><strong>Absent participants’ reasons for leaving or drop-off</strong></td>
</tr>
<tr>
<td align="left">- Have not budgeted sufficient time for the course participation</td>
</tr>
<tr>
<td align="left">- Vacation and heavy workload</td>
</tr>
<tr>
<td align="left">- Workload and daily other duties</td>
</tr>
<tr>
<td align="left">- Temporary illness and did not catch up at beginning</td>
</tr>
<tr>
<td align="left">- Heavy workload from other project and family duties</td>
</tr>
</tbody>
</table>

As we can see, a general opinion and feedback for the course absence, is that people are mostly too busy and occupied by daily duties and other business agenda (some were also caught by the illness, unfortunately), so people generally think online teaching is an interesting topic to talk about, but most people are not able to budget their time resources for a such course, even 1-3 hours per day for a week seem to be too much demanding for a heavily loaded college teacher.

The remaining question is what can we learn from this lesson? As a summary of experiences for this NBU conducting, it is reasonable to state these two remarks:

- Online teaching and learning is rather another form of “free speech”: Online teaching and learning offers us another teaching option, and it will enrich the variety and dimensions of teaching methods. Furthermore, it provides an option of flexible learning.
- Online teaching and learning is not a “free lunch”: We should probably learn a lesson that online teaching and learning is not a time saving, but rather a time consuming option for us. In fact, research work for online teaching has indicated that one would have to spend 50% more time resource when compared with traditional face-to-face teaching methods.

At the first course days, we asked every participant to write down what they expect from this course and collected these wishes as references. Among the few answers, there were 2 of answers mentioned about online teaching as an alternative approach to broaden their teaching options, thus more free options as a supplement.

It is a natural thought for many to consider an extra or more options for their daily work. There are however less people to thinking about the necessary resource and budget for such freedom. Consequently, many are initially interested for online solutions, but drop-off afterward.
4. FINAL CONCLUSIONS
Upon to now, this NBU course has conducted 7 times for university and college teachers (5 for Østfold University college teachers and 1 for Shijiazhuang University of Economics in P.R.China, and 1 for Icelandic College of Engineering and Technology in Iceland).

The current analysis report was written for the 4th NBU conducting for Østfold University teachers. Compared with other NBU conducting/arrangements, this NBU has the following characters/remarks, the final conclusions for this NBU conducting:

- Statistically, this NBU course has relatively lower activity levels, both in active and passive read-only class performance.
- There were however few, particularly 2 active and engaged course participants, whom almost cheered up the class performance.
- Many have entered the course and read the course content/syllabus, but only few did exercise work with the class assignments, even fewer have accomplished all assignments.
- Few people had good intention and interests to participate in the course, but they were never able to visit the course online, due to different reasons.
- Heavy workload from participants’ daily duties and underestimation of time resource requirement are the common reasons for a number of people drop-off from the course.

Early NBU conducting showed other reasons for participants’ drop-off, included technical difficulties. This aspect was also mentioned sometimes during the current NBU conducting. However, this was not the only reason that people drop-off the course. It is rather reasonable to conclude that motivation and heavy workload are the main reasons for drop-off.

For further improvement, we will recommend following suggestions for NBU conducting next time:

1. It is important for course participants to have realistic expectations and set up a sufficient time budget for the course conducting. When participating in an online course, do not think it will be a “free lunch” in your time budget, but rather a form of “free speech” for your future teaching methods.

2. “Learning by doing” shall be a principle for the course conducting and every participant’s online activities during the course and communication frequencies (number of sent documents and reading web pages) need to be encouraged and increased.

3. It will be beneficial to group participants, and each group will be led by a local enthusiast for coordinating and further motivation for other participants in the same group. Also, it is helpful that participants will work in groups and help each other during/after the course conducting, so that one course participant’s competence in online teaching shall be transferred to the others in the same group.

4. University, college or school’s top leaders shall have understanding of the necessity and importance for time budget and time consuming when their employers are attending an online course, or working with an online teaching course. As we concluded early in the analysis, nothing is free, but only free for new thought.

For further course conducting, it shall also pay more attention to the class size and composition of the participants. It is also important to focus on the need of group process online and getting familiar each other among the participants, so that the learners really feel comfortable within this online learning environment. The budget of time and responsibility for the course attending is however the first priority that needs to be done.

We can have free options to choose our ways to the future, but we cannot be free from our duties and responsibilities. This shall also be the case for our online teaching and learning.

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REFERENCES


