PEDAGOGICAL EVALUATION CRITERIA FOR VIRTUAL COURSES: A Case Study from a Bachelor’s Degree Program

CONSTANTINO NETO
BEATRIZ BETTENCOURT
1. Challenges of virtual bachelors’ courses at the rain forest
2. Building pedagogical criteria to evaluate virtual courses
3. Methodology of the evaluation study
4. The results
5. Improving the course: choices and paths
Challenges of virtual bachelor’s courses at the rain forest

Virtual courses: an answer to several problems of the region:

- Great distances
- Lack of specialist subject teachers

And new problems to deal with:

- High dropout and failure rates
- Lack of broadband
Where?
Where?

- Juína
- Guarantã do Norte
- Lucas do Rio Verde
- Barra do Bugres

Regular poles
Evaluated poles
The model of semi-presential courses at UAB (Open University of Brasil)

- Ministry of Education of Brazil
- Public institutions of higher education
- State or City Hall Government

- Financial Support
- Educational Support
- Infrastructure Support

- Presence Support Pole
  - Student
  - Student
  - Student
The aims of the course evaluation

Improving the LE (Learning Environment) and other pedagogical resources in order to provide a more successful learning
The evaluation approach is focused on consumers (WORTHEN, SANDERS, FITZPATRICK, 2004);

We designed a Likert scale composed by 32 sentences addressing the matters related to the pertinent pedagogical criteria;

The questionnaire, after validation, was applied at the end of the 1st semester to the students of four support poles, in the subjects where higher failure and dropout are registered.

The answered questionnaires (112) were object of a statistical treatment. To check the reliability of the categories the Alpha test by Cronbach was used.
At what extent pedagogical foundations of distance-learning are applied in the subjects of the first semester of the course?
Pedagogical criteria to evaluate the course:

1. References

- Theory of Significant Learning and the Conversational Framework, by Laurillard (1993);
- The Viable Systems Model, by Beer (1981 and 1999);
- The interactionist, systemic and constructivist evaluation model proposed by Schlemmer, Sacol and Garrido (2007);
- The guidelines to assess learning environments by their teaching usability used by Nokelainen (2006).
Pedagogical criteria to evaluate the course:
2. Categories

1. Motivation
2. Mentorship
3. Formative assessment
4. Cooperation
5. Autonomous learning
6. Pedagogical usability of LE
Indicators for Motivation Category

- Initial motivation.
- Motivating activities.
- Use of internet Consulting.
- Consulting in other media.
- Awareness of the importance of content.
Indicators for Mentorship Category

- Support from tutor
- Timely feedback
Indicators for Cooperation Category

- Collaborative learning in the disciplines.
- Support among students.
Indicators for Pedagogical Usability of LE Category

- Comprehensability of materials.
- Diversity of materials.
- Activities oriented to practice.
- Utilization of Interactive resources.
“At the beginning of this Subject, I was motivated to study it.”

“In this Subject, I used the library books as research source.”

“In this Subject, I used the internet as a research source.”

“The activities assigned in this Subject encouraged me to research more about its content.”

“This Subject has increased my interest concerning the Course of Internet Systems Technology.”

“I have never been motivated to study this Subject.”
“The present tutor encouraged me to carry out the activities of this Subject.”

“The support of the distance tutor helped me advance in my learning process.”

“From my work activities, I received a rapid feedback from the tutor.”

“The distance tutor helped me when I faced difficulties concerning the Subject contents.”
SENTENCES ABOUT CONTINUOUS ASSESSMENT

“Throughout this Subject, I had no chance to assess if I had acquired the necessary knowledge.”

“In this Subject, I answered self-assessment questionnaires.”

SENTENCES ABOUT COOPERATION

“My colleagues helped me to study this Subject.”

“In this Subject, I carried out group activities.”
The Questionnaire

SENTENCES ABOUT AUTONOMOUS LEARNING

“I could choose the activities according to my progress in the Subject.”
“I could use my background knowledge to carry out the activities of this Subject.”

SENTENCES ABOUT WEB CONFERENCES

“The web conference has allowed me to chat with the tutor and my colleagues about this Subject’s content, in order to solve my doubts.”

“The web conferences in this Subject helped me to learn.”
“The Virtual Learning Environment clearly showed me what I had to know after using the instructional material of this Subject.”

“The materials used in this Subject were varied (images, animations, illustrated texts with graphics, video or audio).”

“The animations, images and graphics used in this Subject helped me to learn.”

“I had to read many times the contents of this Subject in order to understand them.”

“The book’s material in this Subject could be more clear.”

“The VLE of this Subject allowed me to carry out practical activities.”

“I used the chat and the forum to communicate with my colleagues about this Subject’s content.”
### Applying the Questionnaire

<table>
<thead>
<tr>
<th>Support Poles (cities)</th>
<th>Disciplines</th>
<th>Applying Date</th>
<th>Number of questionnaires</th>
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<tbody>
<tr>
<td>Barra do Bugres</td>
<td>Algorithms</td>
<td>May, 2014</td>
<td>30 17</td>
</tr>
<tr>
<td></td>
<td>Hyper/Multimedia</td>
<td>May, 2014</td>
<td>30 11</td>
</tr>
<tr>
<td>Guarantã do Norte</td>
<td>Algorithms</td>
<td>May, 2014</td>
<td>30 11</td>
</tr>
<tr>
<td>Juína</td>
<td>Algorithms</td>
<td>May, 2014</td>
<td>30 24</td>
</tr>
<tr>
<td></td>
<td>Web for Design</td>
<td>May, 2014</td>
<td>30 15</td>
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<tr>
<td>Lucas do Rio Verde</td>
<td>Applied Mathematics</td>
<td>April, 2014</td>
<td>30 15</td>
</tr>
<tr>
<td></td>
<td>Hyper/Multimedia</td>
<td>May, 2014</td>
<td>30 19</td>
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<tr>
<td><strong>Sum</strong></td>
<td></td>
<td></td>
<td><strong>240 112</strong></td>
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Results
Motivation

<table>
<thead>
<tr>
<th>Category</th>
<th>Score</th>
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<tbody>
<tr>
<td>Initial motivation</td>
<td>4.29</td>
</tr>
<tr>
<td>Searching</td>
<td>4.33</td>
</tr>
<tr>
<td>Motivating activities</td>
<td>3.72</td>
</tr>
<tr>
<td>More interest</td>
<td>3.35</td>
</tr>
</tbody>
</table>
Incentives: 4.29
Help in difficulties: 4.54
Support progressing: 3.25
Feedback in time: 3.55
Tutor helping Appreciation

- Quality service
- Availability;
- Subject knowledge;
- Incentive;
- Motivation.
Cooperation and other Item

- Team work (4): 3.55
- Collegues’ support (4): 3.32
- Possibility of choice (5): 2.83
- Self evaluation exercises (3): 2.82
Pedagogical Usability of Learning Environment

- Clearness materials: 3.79
- Practical Activities: 3.35
- Materials variety: 3.21
- Interactivity: 2.72
Pedagogical Usability of Learning Environment

- **Practical Activities**
  - It was considered insufficient by the students the use of practical activities in all disciplines.

- **Interactivity**
  - Except for Design for Web (where VLE encouraged the dialogue) in other disciplines this has been undeveloped.
The help provided by the web conference was considered ineffective in most poles.

Except for Design for Web, this feature did not act properly in doubt solution.
Differences among disciplines

<table>
<thead>
<tr>
<th></th>
<th>Web for Design</th>
<th>Algorithms</th>
<th>Hyper/Multimedia</th>
<th>Applied Mathematics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Utility of Web Conf.</td>
<td>3.54</td>
<td>2.34</td>
<td>3.27</td>
<td>3.87</td>
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<tr>
<td>Evaluation of LR</td>
<td>3.5</td>
<td>3.27</td>
<td>3.13</td>
<td>4</td>
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<tr>
<td>Team Work</td>
<td>3.13</td>
<td>2.53</td>
<td>3.23</td>
<td>4.07</td>
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<tr>
<td>Motivating Activities</td>
<td>3.17</td>
<td>2.87</td>
<td>3.46</td>
<td>3.86</td>
</tr>
</tbody>
</table>

MOTIVATING ACTIVITIES

0  0.5  1   1.5  2   2.5   3   3.5   4   4.5

- Web for Design
- Algorithms
- Hyper/Multimedia
- Applied Mathematics
The course problems, by the students

- "The lack of a tutor with experience in the discipline ..." [R23].
- "The fact of being a while out of school, have been downtime without entering college in time, etc." [R6].
- "The lack of face-to more materials, the difficulty to understand the contents, which were asked in the activity." [R53].
- "I could not find myself in this discipline." [R68].
- "Everything was new. We have not received printed handouts. You need time to study well content. "[R16].
- "The lack of meetings, for that matter should have much more regular classes." [R80].
Meeting the students suggestions implies:

- Rethinking the teaching methodology;
- Revision of the webconferences timetables and format;
- More practical activities;
- More materials, clear and appealing ones.
Conclusions

- Probably because it is a different way from what he's used to attend, the student sees a set of characteristic of DL factors like discouraging.

- He feels insecure, somewhat autonomous, indecisive and without support to solve his problems, which often leads him to fail commitments and, finally, to evade the course.
Conclusions

- The fundamentals of DL provide guidance as to the course to help students overcome these difficulties. All disciplines evaluated, they are not implemented properly.

- The VLE is not so clear and varied as it should be and does not encourage the mutual collaboration between students and their autonomous learning.

- Instead of being a motivator, various features of the Courses, such as web conferencing or tutor distance, are evaluated as poorly fulfilling its role. In contrast, face tutoring is highly valued.
Limitations:
- Time;
- Geographical space.

Recommendations:
- Increase the incentive to motivation, autonomy and teamwork;
- Enhance the capabilities of VLE;
- Support the creation of a team of permanent study and research in distance education;
- Restructure the VLE in the poorest disciplines.
Thank you!