Blended Learning: Best Practices

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What is Blended Learning?

- *Blended learning is a formal education program in which a student learns at least in part through online delivery of content and instruction with some element of student control over time, place, path, and/or pace.*

  Staker / Horn, May 2012
Blended Learning @ TCNJ

◆ 6 week summer courses (8 week in computer science), expanding into January
◆ Courses held on-line with 1 on-campus session per week (3 - 3.5 hours)

◆ On-Line
  ◆ Lectures / Exercises
  ◆ Supporting Materials
  ◆ Office Hours
  ◆ Discussions

◆ On-Campus
  ◆ Lectures
  ◆ Office Hours
  ◆ Discussions
  ◆ Other activities
Timeline

- Summer 2011: Blended learning initiated at TCNJ
- Summer 2012: First offering (Accelerated CS 1/2; mostly computer engineering, some early computer science students)
- Summer 2013: HON 280 Creative Computing (Media Computation with Python)
CSC 250 : Accelerated CS 1/2

◆ Serves to fulfill curriculum coverage of object-oriented programming (CS1) and data structures (CS2) in one class

◆ Taught using Java

◆ Enrollment: ~20
  ◆ 80% electrical and computer engineering
  ◆ 20% CS students with Java background
CSC 250 : Accelerated CS 1/2

◆ Assessments:
  ◆ Weekly closed labs working in pairs
  ◆ Monthly, larger, take-home programming projects
  ◆ Mid-term examination
  ◆ Final-examination
  ◆ Mandatory blended learning survey
CSC 250 : Accelerated CS 1/2

- Average student has a programming background

- Engineering students: Procedural C++ (no Object-oriented programming (OOP))

- Computer Science students: C++ or Java w/ OOP
CSC 250 : Accelerated CS 1/2

- Misc.
  - Initial enrollment: 12
    - 9 TCNJ students
    - 1 incoming TCNJ freshman
    - 2 attending other institutions
  - Completing course: 6
    - 1 of 2 from another institution
CSC 250 : Accelerated CS 1/2

- Highly accelerated pace
  - Covered 3-5 chapters per week (depending on content)
  - 2 labs (small programming work) per week
  - 1 take-home programming project per week

- On-class time was used to provide short lectures on key concepts and hands-on lab work with instructor oversight / help
Student Feedback
Summer 2012

- Analysis of Qualtrics survey

Report on Student Feedback from Blended Learning Courses, Summer 2012
Prepared by: Jason Dahling, Helene Anthony, John Oliver, and Deborah Knox, for the Teaching and Learning Program Council (TLPC), November 14, 2012.

- 119 respondents (133 registered students in 10 courses) 89% response rate

- ~50% juniors and seniors; ~30% graduate students
Survey: Why Take Blended Learning?

Figure 1: Primary reasons for choosing a blended learning course

- Disability makes travel difficult
- Interest in instructor, not course
- Other reasons
- Job responsibilities create conflicts
- Only available option that fit schedule
- Flexibility in completing assignments
- To fulfill a required course
- Convenience of irregular commute

Number of Students

Courtesy TCNJ Center for Excellence in Teaching and Learning
Summer Blended Learning @ TCNJ

Figure 2: Primary reasons for choosing blended learning at TCNJ

- Needed to replace a grade: 5
- Other reasons: 14
- Prefer to work with TCNJ faculty: 38
- Most convenient to complete at TCNJ: 53

Number of Students

Courtesy TCNJ Center for Excellence in Teaching and Learning
### 2012 Survey Results

<table>
<thead>
<tr>
<th>Question</th>
<th>Decreased</th>
<th>Same</th>
<th>Increased</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amount of interaction with other students</td>
<td>40%</td>
<td>33.7%</td>
<td>26.3%</td>
</tr>
<tr>
<td>Quality of interaction with other students</td>
<td>30.5%</td>
<td>48.4%</td>
<td>21.1%</td>
</tr>
<tr>
<td>Amount of interaction with the instructor</td>
<td>22.1%</td>
<td>53.7%</td>
<td>24.2%</td>
</tr>
<tr>
<td>Quality of interaction with the instructor</td>
<td>17.9%</td>
<td>56.8%</td>
<td>25.3%</td>
</tr>
</tbody>
</table>

*Courtesy TCNJ Center for Excellence in Teaching and Learning*
TCNJ Best Practices

◆ Building community
  ◆ Small group work - peer editing / grading
  ◆ Asynchronous discussion forum - modeling meaningful contributions
  ◆ Email / Social networking

◆ Consider best use of on-campus time (face-to-face class)
  ◆ Learner centered activities (flipped classroom)

Courtesy TCNJ Center for Excellence in Teaching and Learning
Recommendations on blended learning modality

- Communicate the demands of the blended learning model to students (*repeat as appropriate*)
- Set clear expectations for the workload and pace
- Dispel assumption that a blended course will be easier because of the irregular class meetings

*Courtesy TCNJ Center for Excellence in Teaching and Learning*
Recommendations on syllabus

◆ Plan syllabus carefully
  ◆ Remove redundancies in goals and assignments

◆ Integrate the online and classroom activities

◆ Each activity should lead student towards meeting learning goals
  ◆ Online activities should be used when they meet course goals more effectively than face-to-face strategies
  ◆ Select most appropriate approach

◆ Remove activities that require extensive face-to-face interactions to complete successfully

*Courtesy TCNJ Center for Excellence in Teaching and Learning*
Recommendations for course preparation

◆ Budget adequate time to attend training on blended learning, prepare syllabus, and course
  ◆ Some students indicate that faculty struggled to prepare their materials while the course was ongoing

◆ Prepare materials for courses before the start of the blended learning session.
  ◆ Prepare assignments, lecture notes, and other resources
  ◆ Avoid delaying students’ progress on assigned work

*Courtesy TCNJ Center for Excellence in Teaching and Learning*
Recommendations for class time

- Emphasize discussions
  - Some students found it hard to contribute meaningfully online

- Include high-quality forms of peer and instructor interactions

- Use the full time period when face-to-face meetings are scheduled
  - Some students noted that their in-class meetings were quite short and not worth the drive to campus

*Courtesy TCNJ Center for Excellence in Teaching and Learning*
CSC 250 Results

- Mixed results
  - Disappointed by course withdrawals

- 6 week format was too challenging
  - No time for absorption
  - Little time for confidence building
  - Pace of grading / feedback / support

- Challenge to run this type of course in blended learning fashion
Blended Learning + Computer Science

- 2012: Database systems, CSC 250

- 2013: Software engineering, HON 280

- HON280: Non-major introduction to programming in Python using media computation
Blended Learning + Humanities

- May be more successful in humanities
  - Off line: reading, essays, discussion

- Seem to attract more students

- More widely required across the curriculum

- More widely accepted at other institutions
Additional resources on blended learning

- UWM Faculty Resources: Tips
  - [http://www4.uwm.edu/ltc/hybrid/faculty_resources/tips.cfm](http://www4.uwm.edu/ltc/hybrid/faculty_resources/tips.cfm)

- Idaho Digital Learning, Blended Community
  - [https://sites.google.com/a/idahopd.org/blended-learning/blended-community](https://sites.google.com/a/idahopd.org/blended-learning/blended-community)

*Courtesy TCNJ Center for Excellence in Teaching and Learning*
Gracias

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◆ TCNJ Center for Excellence in Teaching and Learning
  ◆ http://cetl.pages.tcnj.edu

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