

Practitioner tools for designing blended learning

Stephen Bostock

s.j.bostock@keele.ac.uk

Blended Learning Conference,
BLU June 2006

Summary

1. Learning and teaching and assessment should be integrated with intended outcomes.
2. E-learning, e-teaching and e-assessment should be integrated with intended outcomes, and therefore with traditional learning, teaching and assessment.
3. Practitioners need simple paper tools to guide a systematic approach to design.
4. All tools have educational assumptions.
5. Outcomes-based design is the consensus but different educational assumptions can generate other tools.

3 First, a needs analysis

Factors to consider, before we can select and design teaching and assessment methods, include

1. Teaching philosophy, learning styles
2. The learners
3. Other stakeholders
4. Subject domain & intended learning outcomes (given?)
5. Environment, resources, constraints
6. Aims and evaluation methods needed

E.g. JISC Effective Practice Planner ⁴

4 Assumptions for design

1. The importance of learning activities

2. Outcomes-based curriculum design

with outcomes such as those of the QAA for Programme Specification ¹

- Subject specific knowledge
- Subject specific skills
- Cognitive skills e.g. critical analysis
- Key (employability) skills e.g. use of IT

Although there are limitations of outcomes based design e.g. Barnett & Coate 2005 ²

And different philosophies of Teaching/Learning (see later).

Aiming at a *blended* design

3. Integration of teaching, learning and assessment

- Teaching and learning, online and onsite, are aligned with intended outcomes and assessment
- Technology uses are aligned with other teaching-learning-assessment activities
- And mutually supportive
- For a balanced experience for teacher and students
- Technology is therefore permanently embedded

Constructive alignment ³

What The Teacher Does

Assessment Tasks

enable students to demonstrate learning in particular contexts, consistent with the verbs in the ILOs

Intended learning outcomes

with active verbs describing the learning to be demonstrated, at threshold level and possibly higher grades of performance.

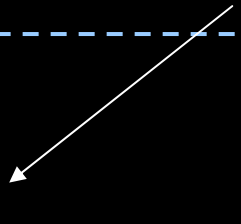
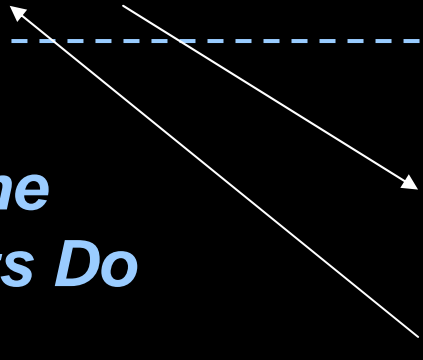
Teaching Activities

to encourage students to behave in ways that will promote the learning outcomes.


What The Students Do

Learning activities

Learning outcomes



Generating options

| Assessment tasks Online/CAA | Assessment tasks Onsite /traditional | Intended learning outcomes | Teaching- Learning Activities Online | Teaching- Learning Activities Onsite /F2F |
|---|--|-------------------------------|---|---|
|  1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |

A notional TLA example

| Intended learning outcome | Teaching-Learning Activity: Online | Teaching-Learning Activity: Onsite |
|---------------------------------|------------------------------------|------------------------------------|
| Recall information X | Web documents & links | Reading a set book, lectures |
| Perform skill Y | Formative quizzes | Problem sheets in class |
| Contribute to discussion on Z | Asynchronous text discussions | Tutorials |
| Apply knowledge and skills to W | Computer simulation | A field trip |

A notional TLA example

| Intended learning outcome | Teaching-Learning Activity: Online | Teaching-Learning Activity: Onsite |
|---------------------------------|------------------------------------|------------------------------------|
| Recall information X | Reading a set book, lectures | Web documents & links |
| Perform skill Y | Problem sheets in class | Formative quizzes |
| Contribute to discussion on Z | Tutorials | Asynchronous text discussions |
| Apply knowledge and skills to W | A field trip | Computer simulation |

Blending strategies

Having identified possible online and onsite TLAs (or assessments), why select one or both?

1. **Deficit**
technology provides missing support for learning activities. E.g. online discussion in distance learning
2. **Substitution**
substitute a traditional element with a technology-based one. E.g. online tutorials replace onsite tutorials
3. **Enrichment**
technology duplicates existing TLAs, giving a choice of media suitable for different learning styles. E.g. lecture handouts on web, podcasts

A simple tool

| Intended learning outcome | Teaching-Learning Activity: Online | Teaching-Learning Activity: Onsite |
|---------------------------|------------------------------------|------------------------------------|
| | | |

¹²Efficiency and/or effectiveness?

- For all three strategies above, will it improve
 - efficiency (reduce costs) and/or
 - effectiveness (of learning, teaching, assessment)?
- Costs are mostly time: preparing and during learning/teaching/assessment. ⁵
 - For staff: workload this year and time investments recouped in later years
 - For students: the total learning hours available
 - *Total time must not increase for either!*
- Effectiveness: teacher judgement, then evaluation, of learner experience and outcomes

A tool with costs

| ILOs | TLA online | TLA onsite | Online costs before + during | | Onsite costs before + during | |
|------|---------------|---------------|---------------------------------|---------|---------------------------------|---------|
| | | | Teacher | Student | Teacher | Student |
| | | | | | | |

Hours:



workload



150 learning hours

And for assessment ...

| Intended learning outcome | Assessment: online, CAA | Assessment: onsite, traditional |
|---------------------------|-------------------------|---------------------------------|
| | | |

... with costs and combined

| ILOs | Assessment: CAA | Assessment: Tradit. | CAA costs before + during | | Traditional costs before + during | |
|--------|--------------------|------------------------|------------------------------|---------|--------------------------------------|--------------------|
| | | | Teacher | Student | Teacher | Student |
| | | | | | | |
| Hours: | | | ↓ | ↙ | ↘ | ↓ |
| | | | workload | | | 150 learning hours |

Assessment criteria

(i.e. summative assessment, grading)

- Effectiveness

- Validity of testing outcomes
- Reliability of result
- Utility for impact on learning

- Efficiency

- Time costs beforehand (staff and student preparation) and during (student time and staff marking)

Other frameworks

Tabular quality checklists can be constructed for different educational frameworks e.g.

1. *Modes of student engagement* has 5 broad types of Teaching-Learning Activities⁶
2. Social constructivism as *Rich Environments for Active Learning* (REALs) has 5 themes^{7,8}
3. Diana Laurillard's *Conversational Framework* 12 processes that can be simplified to 6^{9,10}

Modes of student engagement

| Engagement Mode | Online TLAs | Onsite TLAs |
|---------------------------------|-------------|-------------|
| Simple information presentation | | |
| Enhanced presentation | | |
| Individual activity | | |
| Student-student interaction | | |
| Student-teacher interaction | | |

Social Constructivism

| Constructivist Principle | Online TLAs | Onsite TLAs |
|-------------------------------------|-------------|-------------|
| Authentic assessment | | |
| Student responsibility & initiative | | |
| Active learning | | |
| Authentic learning contexts | | |
| Cooperative support | | |

The Conversational Framework

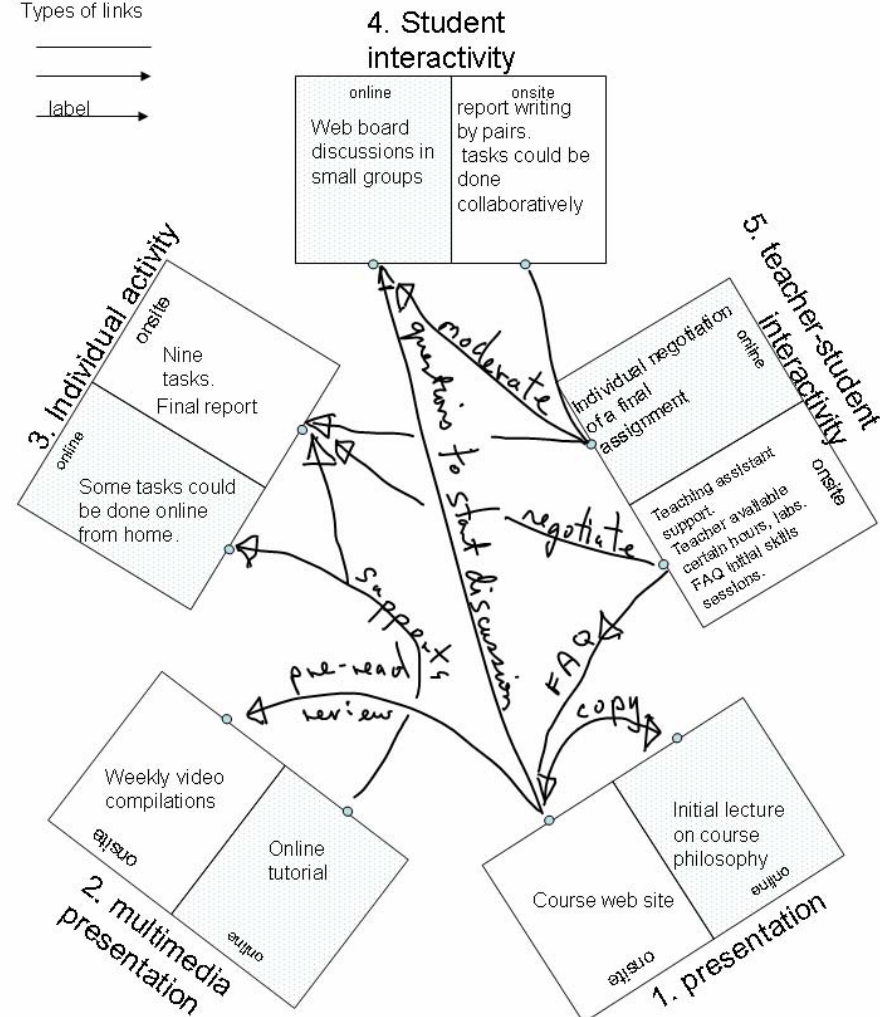
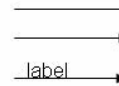
| Course feature | Online TLAs | Onsite TLAs |
|---------------------------|-------------|-------------|
| Information delivery | | |
| Discussion with teacher | | |
| Task goals understood | | |
| Practice skills | | |
| Reflection and adaptation | | |
| Student cooperation | | |

Visualizing *embeddedness*

- Other diagrams may make explicit the integration
- Table into Web view
E.g. modes of engagement example

An example of the modes of engagement framework
 Bostock S.J. 1998 *Constructivism in mass higher education: a case study* BJET 29 (3) 225-240.

Types of links



Conclusion

- Practitioners need simple paper tools
 - Consistent with the educational framework in which they work
 - Generating design choices and selecting from them with explicit criteria
 - Range of tools can add complexity such as workload and *embeddedness*
- Tabular tools can represent other educational frameworks

References

1. QAA 1999 *Guidelines For Preparing Programme Specifications*
<http://www.qaa.ac.uk/academicinfrastructure/programSpec/>
2. Barnett R. and Coate K. 2005 *Engaging the curriculum in Higher Education*
SRHE
3. Biggs J. 2003 *Teaching for quality learning at university*, 2nd ed. SRHE
4. JISC, 2004 Effective Practice Planner http://www.jisc.ac.uk/elp_practice.html
5. Oliver, M. and Conole, G. 1998 A pedagogical framework for embedding C&IT into the curriculum *ALT-J* 6 (2) 8.
6. Bostock, S. J., Hulme, J. A. and Davys, M. A. 2006 CommuniCubes: Intermediate Technology For Interaction With Student Groups, chapter in *Audience Response Systems in Higher Education* edited by David Banks
7. Bostock, S.J., 1998, Constructivism in Mass Higher Education: a Case Study *British Journal of Educational Technology* *British Journal of Educational Technology* 29 (3) 225-240
8. Grabinger, R. S. & Dunlop, J. C. (1995). Rich environments for active learning: A definition. *ALT-J*, 3(2), 5-34.
9. Hegarty, J.R. Bostock, S J. and Collins, D. 2000, Staff development in information technology for special needs: a new, distance-learning course at Keele University, *British Journal of Educational Technology*, 31 (3), 199-212.
10. Laurillard, D. *Rethinking University Teaching* 2001 2nd ed. RoutledgeFalmer

²⁴Downloading tools & examples

Email s.j.bostock@keele.ac.uk

or, soon

www.e-t.org.uk



e-teaching

SEDA paper 2006