

New Approaches to Learning Materials

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**Chairman
btl**

About BTL Group Ltd

- 50 people, based in Saltaire, W. Yorks.
- 1986 - Initially developed school e-learning content for publication (in Science & Technology).
- 1996 - Contract elearning development for public and private sector organisations.
- 1999 - Formative and diagnostic assessment materials as part of e-learning.
- 2001 - Examination Content and Systems.
- 2003 - Project Strategy and Deployment for Government programmes.
- 2005 - High Stakes Examination Systems Provider
- 2006 - Systems Development Partner
- 2007 - Learning and Assessment Systems



BTL Group Ltd



**Sister
Companies**



Virtual College Ltd
Learning solutions
within the vocational
e-learning sector

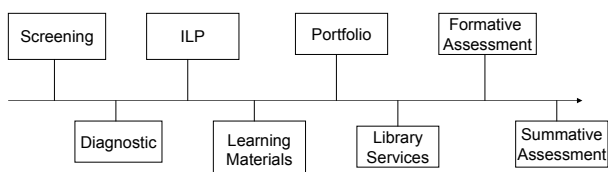
**Elearning
Content
Creation**

**Assessment
Content
Creation**

**Assessment
Delivery
Services**

**Systems
Development**

Learning Journey



Format and style of final assessment drives learning styles

Traditional Learning Journey

- Paper based summative assessment
- Teacher driven
- Linear
- Learning precedes testing
- Feedback via teacher

On Screen Assessment

- More learning will take place on screen
- Some learning will **have** to take place on screen (animation, video or simulation based activity)
- Student centred feedback (rather than via teacher)
- Student centred approach to formative assessment can re-shape the learning journey.

Current Position on e-Assessment

- Very large numbers being tested
- Majority of candidates prefer on screen tests
- Results better
- Rapid feedback appreciated
- Administrative benefits
- More opportunities for formative, screening and diagnostic work
- Separation of assessment and learning less discrete

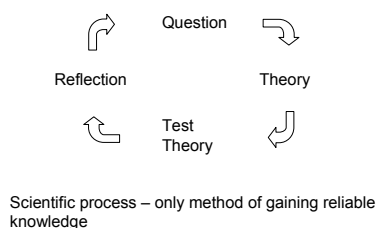
Theory

- No adequate theory in scientific sense
- Framework for thinking:
 - Interactions of learner with environment
 - Thought processes of learner
 - Route through learning material
 Pragmatic approach leading to solutions that people will buy.

Learning Elements

- Interactions with the environment
 - Tell; Show; Guide; Try/Do; Assess (Touch; Taste; Smell)
 - Many combinations possible
- e.g.
- Receptive = Tell + Show
 - Directive = Show + Try/Do
 - Guided Investigation = Guide + Try/Do

Learning Loop



Learning Loop

- Learning starts with a question
- 'Ownership' of the question is key to motivation
- An internal process – goes on all time
- Teaching involves helping learners to follow the route we choose than some other
- Socratic dialogue

Hypothesis

Learning is most effective when it follows as closely as possible the learning loop or discovery route
i.e. it is most effective when it is led by a problem, a puzzle or a question.

Discovery learning often fails because time is wasted - situation is not sufficiently constrained.

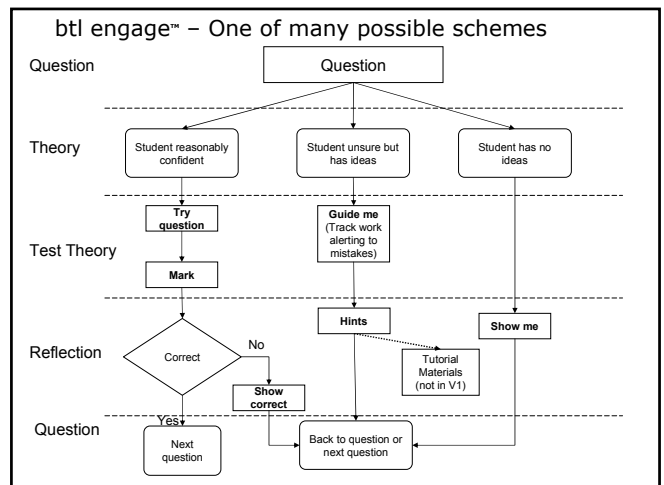
Points to consider

- e-learning offers new approach to learning loop – driven by learner rather than teacher
- Simulations offer much tighter constraints than practical work
- Feedback can occur exactly where it is required – at the point of cognitive conflict. The *location* of an error can be highlighted *without* an explanation.

The Challenge

Devise

- a means of combining Learning Elements
- and
- a route through the material which drives the learner round learning loop as effectively as possible



Demonstration

Many Other Alternatives Possible

- Interactive Questions
- Interactive Worksheets
- Revision Materials (e.g.TDA)
- Adaptive Learning Materials
- Self-Select Tests

Demonstration

Progress to date

- Small classroom trial - fractions – very positive response
- Adopted by TDA for preparation for the numeracy test (taken by all trainee teachers – btl questions used)
- BTL revision tests

Thank you

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