

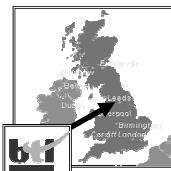
## New Approaches to Learning Materials

Bob Gomersall

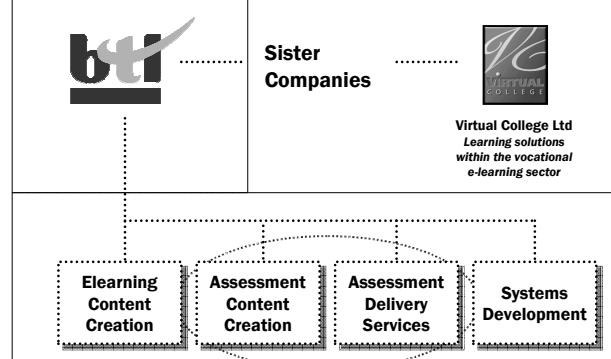
**Chairman**  
**btl**

### About BTL Group Ltd

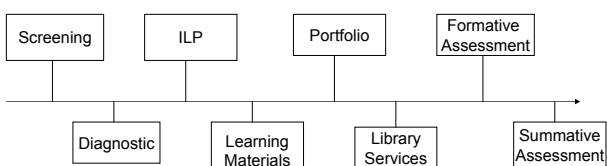
- 50 people, based in Saltaire, W. Yorks.
- 1986 - Initially developed school e-learning content for publication (in Science & Technology).
- 1996 - Contract elearning development for public and private sector organisations.
- 1999 - Formative and diagnostic assessment materials as part of e-learning.
- 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



### 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

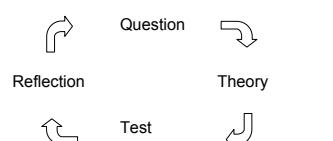
## Theory

- 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



Scientific process – only method of gaining reliable knowledge

## 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

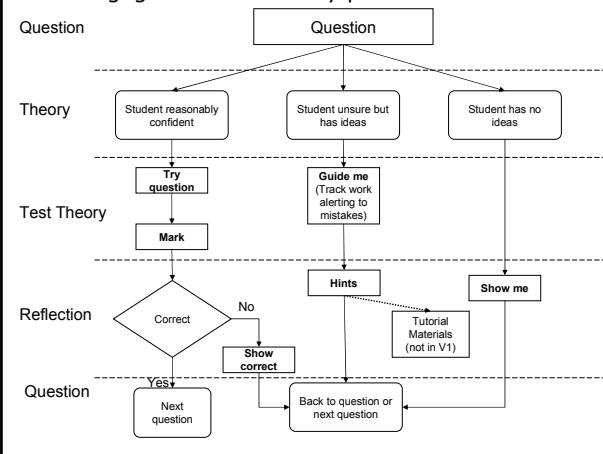
- e-learning offers new approach to learning loop – driven by learner rather than teacher
- Simulations offer much tighter constraints than practical work
- Feedback can occur exactly where it is required – at the point of cognitive conflict. The *location* of an error can be highlighted *without* an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

### btl engage™ – One of many possible schemes



## 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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