

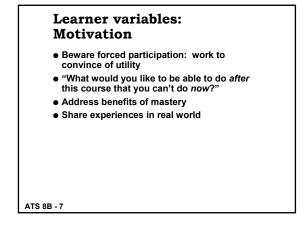
Learner variables: Intelligence

- Less important than frequently assumed
- Effective study methods can compensate
- Encourage questions, discussion
- Praise interventions, ideas, contributions
- Offer assistance outside class

Learner variables: Alertness

- Sleep deprivation harmful to learning
- Use channel variables to enhance alertness
- Provide frequent breaks
- Respond immediately to inattention
- Discourage heavy lunches
- Forbid alcohol during training
- Use humour and the unexpected

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Effective Communication: Channel variables

- Time available
- Working conditions
- Visibility, audibility, clarity
- High interactivity

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Channel variables:

Time available

- At least ~3 min/slide on average
- At most ~1 hr between breaks

Channel variables:

• Speak clearly at all times

Slower than conversation

• Overinflect for emphasis

• Stand, move, sit

Vary speed

Visibility, audibility, clarity

- At most ~7 hr/day
- If possible, have 1 or more days or sessions for better assimilation and application

Channel variables: Working conditions

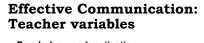
- Keep room relatively cool
- Lights bright if possible
- Comfortable chairs
- Desks or tables
- Printed materials with room for notes
- Multimedia: reference articles, videos

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Channel variables: High interactivity

- Ask questions frequently
- Challenge individuals
- Turn discussion to personal experiences
- Use digressions constructively
- Use digressions constructively
- Use examples from students' experiences
- Remember individual students' interests

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- Psychology and motivation • Empathy and imagination
- Patience
- Subject knowledge • Background knowledge
- Ethical standards

Teacher variables: Psychology and motivation

- Commitment to student achievement
- Encourage questions, challenges
- Beware feelings of power and superiority
- Admit mistakes immediately and clearly
- Unforgivable to humiliate students
- Every lesson is a chance for teacher to learn

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Teacher variables: Empathy and imagination

- Remember what it was like being a beginner
- · Identify basic knowledge and skills
- Ensure that basics thoroughly mastered
- If necessary, take longer than planned at start
- Encourage meetings after class if necessary

Teacher variables: Patience

- Find alternative ways of explaining ideas/skills
 - Analogies
 - Examples
 - War stories
- When question out of place, defer answer
- Later in lecture if suitable
 - At break or after class
- Respect students for wanting to understand

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Teacher variables: Subject knowledge

- Difficult or impossible to teach without mastering subject
- Ideally, create own materials
- Use all available resources to supplement knowledge
 - Textbooks
 - Articles
 - Colleagues
 - Online databases
- "I don't know; let's try to find out!"

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Teacher variables: Background knowledge

- Read widely in related areas
- Bring in analogies from other areas of experience
- Use personal life-experiences when suitable
- Talk about feelings as well as ideas
- Express values openly

Teacher variables: Ethical standards

- Work for the students' good
- Revise materials as appropriate
- Provide value for money
- Work hours contracted for
- Take students' other commitments into account
- Make it possible to achieve maximum grades
- Beware of emotional entanglements with students

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Effective Communication: Message variables

- Context
- Behavioural objectives
- Organization
- Content
- Review questions

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Message variables: Context

- Provide overview of coming materials
- Explain why information matters to students
- Focus on practical skills and examples
- Consider open-book exams, cooperative learning

Message variables: Behavioural objectives

- Avoid internally defined objectives such as "knowing", "becoming familiar with" etc.
- What will the students be able to DO?
- Read, discuss, decide, design, solve, repair, improve, optimize,
 Within contain time limits, with contain
- Within certain time limits, with certain tools available....

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Message variables: Organization

- Design course top-down
- Sketch out areas of concern, skills
 Fill in details
- Provide signposts explaining upcoming sections
- Start each section with restatement of why it
- mattersEmphasize mastery of basic knowledge
- Point to more advanced topics

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Message variables: Content

- Use good-quality textbooks if possible
- Review current literature
 - journals
 - magazines
 - Web sites
- Look for guest lecturers
- Arrange site-visits if possible

Message variables: Review questions

- Helpful for review purposes
- Include passive and active knowledge:
 - Passive: "Which of the following is the component which levitates the flammiger?"
 - Active: "How would you levitate a flammiger?"
- Provide practice in problem-solving; e.g.,
 "A user tells you that....; how would you respond?"
 - "The screen display shows.....; what would your next step be?"

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Evaluation Difficult issue for many teachers Not all agree to evaluate intelligence or learning ability Some insist on evaluating acquired skills Daily quizzes helpful for review Select exam questions exclusively from review questions Use high standard of mastery; e.g., 80% for PASS Provide extra exams (harder) after period for review ATS 8B - 26

Now go and study.