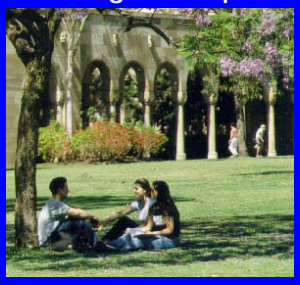
SCIENCE

Learning & Group work



Prof Peter O'Donoghue

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Tertiary Education

Functions of universities:

- **Teaching** (pass on knowledge)
- **Research** (add to knowledge)
- **Service** (utilization of knowledge)

UQ Teaching and Learning Enhancement Plan
"... to pursue excellence in all aspects
of **teaching** and **learning**"

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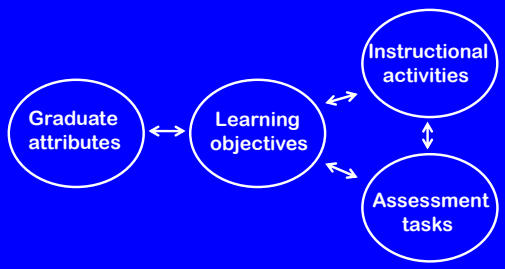
Electronic Course Profile

ECPs: www.courses.uq.edu.au



constructive alignment (CIA) model

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Graduate Attributes

(17 attributes in 5 categories)

- In-depth knowledge — content (specific)
- Effective communication
- Independence and creativity
- Critical judgement
- Ethical and social understanding

— process (generic)

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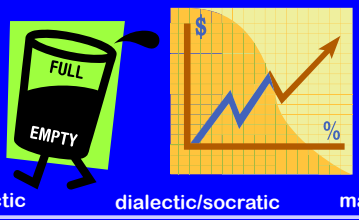
T&L Principles

TRANSMISSIVISM ⟷ CONSTRUCTIVISM

(transmitting content) (constructing meaning)



didactic — dialectic/socratic — maieutic

lectures seminars tutorials practicals problem/case-based

T&L Methods

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Educational Domains

- Psychomotor (doing) → Skills
- Affective (feeling) → Attitudes
- Cognitive (knowing) → Concepts, Knowledge

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Teaching

- **Teachers fill numerous roles**:
  - **content expert** (source of information)
  - **process maker** (provide structure)
  - **formal authority** (set objectives, standards)
  - **facilitator** (help make things happen)
  - **role model** (show desirable behaviours)
  - **personal attributes** (enthusiasm, tolerance, integrity, understanding...)

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What is Learning?

increase in knowledge

• retention	(acquiring/memorising facts)
• recognition	(principles/ideas/concepts)
• cognition	(making sense, understanding)
• action	(developing skills/competencies)

surface learning	deep learning
• atomistic	• holistic
• isolated	• relational
• limited understanding	• good understanding
• quickly forgotten	• long-term retention

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How to engender deep approach?

- use right tools
- provide context
- activity based
- interactive
- motivate, excite
- solid foundations
- transparent process

All about INFORMATION
- acquisition
- understanding

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INFORMATION

- INTERNAL (inside student)

⇒ must be activated

- EXTERNAL (outside student)

⇒ must be acquired

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INTERNAL

activate prior knowledge

- deliberation
- reflection
- review

⇒ metacognition 'thinking about thinking'

⇒ institute checks and balances

- need to audit knowledge (check what they DO know)
- need to identify gaps (indicate what they DO NOT know)

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EXTERNAL

gather information

- print (books/journals)
- multimedia (IT/web)
- people (teachers/peers)

⇒ sort and filter

⇒ institute checks and balances

- decide what, where, how, when, why?
- develop product/report

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Group work

"Community of scholars"

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EDUCATIONAL CONTINUUM

SCHOOLS	UNIVERSITIES	EMPLOYMENT
student-centred small groups interactive personalized set curriculum	teacher-centred large groups limited interaction impersonal elastic curriculum	staff-centred small groups interactive personalized vocational focus

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Advantages of group work

- meet good people, learn ♥♥♥ things!
- vocational practice
- interpersonal skills
- communication
- knowledge base
- personalized
- social competencies
- learning psychology
- fun!

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Disadvantages of group work

- meet bad people, learn #@% things!
- inequities
- logistics
- management
- scope
- sequence
- schedule
- conflict
- not fun!

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Group work

THEORY	PRACTICE
• not *ad hoc*	• *modus operandi*
• well studied	• benefits
• key biological trait	• problems
• ethology/psychology	• survival tips

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Group dynamics

inter-personal relations

[the ways individuals and groups act and react to changing circumstances]

studied in psychology, sociology and communication; relevant to all sciences (social/natural, empirical/formal)

group = 2 or more individuals
who interact and influence each other

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Groups

Educational development (students):
Cohorts, streams, classes, study groups, projects, assessments, examinations

Professional life (common in workplace):
Teams, partners, groups, panels, committees

Social life (relationships):
Families, partners, clubs, societies

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Human development

14 key psychological features

sensation	intelligence
perception	motivation
consciousness	emotion
learning	personality
memory	physical dev.
thought	cognitive dev.
language	social dev.

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Learning

behaviour/response based on experience

- classical conditioning (associative learning)
- operant conditioning (trial-n-error)
- cognitive-social theory of learning

latent learning (cognitive maps)

learning through social interaction

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Social development

- attachment (bonding)
- socialization (behavioural norms)
- relationships (parent, peer, mentor)
- social-cognition (perspective/context)
  (moral development)

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8 psycho-social stages

trust
autonomy
initiative
industry
identity
intimacy
generativity
integrity

all involve social interactions

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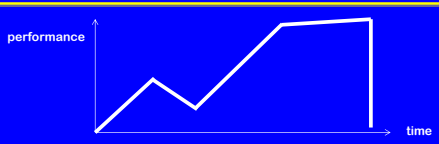
Group performance



Forming	(honeymoon)	orientation
Storming	(conflict)	organization
Norming	(negotiating)	stabilization
Performing	(achieving)	problem-solving
[Mourning	(grieving)	dissolution]

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Group cohesion

- value diversity
  - demographic (age, gender, ethnicity)
  - experiential (familial, social)
  - academic (background, training)
- congregate
  - meet frequently/regularly (no excuses)
  - professionally, socially (mixers)
- establish collective identity
  - proclaim group number/name (inclusive/exclusive)
  - personal/professional/social development/growth
- respect each other
  - politeness, equity, political/social correctness
  - integrity, honesty, fair dealing (in and out of group)

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Group goals

- purpose
  - specific/generic, vested interest
  - contextual relevance (workplace model)
- objectives
  - address course requirements (criteria/standards)
  - negotiate and document learning objectives
- scope, sequence, schedule
  - activate knowledge, seek knowledge
  - time management (commitments, deadlines)
- outcomes
  - product (marks, grades)
  - cognition/meta-cognition (understanding)

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Group activities

- roles (division of labour)
  - leadership, cooperation
  - chair/scribe, elephants/mice
- tasks
  - participation, input/output
  - sources/resources
- performance
  - quantity (superficial/encyclopaedic, collation)
  - quality (review/judgement, feedback/improvement)
- productivity
  - monitoring progress
  - monitoring final product

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Group conflict

- inter-personnel
  - inequities (compliance/procrastination)
  - personalities (ego clashes, bullying/wallflower)
- criticism
  - inevitable (constructive/destructive)
  - compassion (social, intellectual)
- remediation
  - reward (good behaviour)
  - punishment (bad behaviour)
- plagiarism
  - collusion, copying, claiming, contributing
  - group-work / individual-assessment conundrum

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Group help!

FOR PROCESS (not content)

- each other
- other groups
- course coordinators
- Faculty advisers
- Uni student counsellors
- ombudsman
- health professionals

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