THEORIES OF LEARNING FOR THE WORKPLACE
Building blocks for training & professional development programmes

FILIP DOCHY, DAVID GIJBELS, MIEN SEGERS & PIET VAN DEN BOSSCHE
Introduction

● **Stephen Billett**
● Professor at Education and Professional Studies, Griffith University, Australia
● Research expertise:
  ● Learning in workplace
  ● Vocational education
  ● Work-based learning
Individuals’ expertise: Views

- Earlier: Cognitive Psychology
  - Mind is separate from the world
  - Emphasis on “Domain-specific knowledge”
  - It attempts to understand individual learning (the mind) as separate from the influences of the social world that people are a part of

- Billett’s concern: Social component of learning, more social constructivist

- Billett’s New understanding of Expertise
  - is relational in terms of requirements of a particular social practice in which it is enacted;
Individuals’ expertise

- is embedded, being the product of extensive practice, with meaning about practice derived by becoming a full participant, over time, and with understanding shaped by participation in the activities and norms of that practice;

- comprises competence in the community’s discourse, in the routine and non-routine activities, mastery of new understanding, and the ability to perform and adapt existing skills;

- is reciprocal, shaping as well as being shaped, by the community of work practice, which includes setting and maintaining standards of the practice; and

- requires insight in the appropriateness of problem solutions, such as knowing what behaviours are acceptable, and in what circumstances, in problem solving.
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⚠️ Access to process and product

 ↘️ Understand the outcomes of work activities
Billett’s learning curriculum: analyse the example?

- The “T Chemicals” case:
- In the beginning, when Eddy just started getting training sessions, his mentor asked him to visit one of his colleagues which he helped to get started in T Chemicals. Due to this conversation with his co-worker and seeing how he influenced his career, Eddy learned a lot about the importance of passing on and sharing know-how and skills. In addition, his mentor confronted Eddy with facts and figures about his own efficiency and productivity in the organisation. These activities gave Eddy insight in the process and product.
- Not only does Eddy receive guidance from his mentor (proximal guidance), he also is also influenced by others. By observing the workers around him and interacting with the physical space that surrounds him, he also receives distal guidance.
The two main components of Billett’s learning curriculum are 'the activities' and 'the guidance'. The employers must provide a pathway of activities which encourage the employees to move from a peripheral to a full participation. This pathway should also include the access to process and product. This means that "early in the learning pathway, there have to be opportunities for learners to access and understand the outcomes of their work activities" (Billett, 1996, p.53). Guidance is categorised in close (proximal) and distant (distal) guidance. Proximal guidance entails guidance by experts and a choice and sequencing of activities. Distal guidance refers to other workers, activities and the physical environment. Functional layouts of environments and even the positioning of coffee and/or copy machines may have an influence on the worker.
After reading “The T Chemicals case”:

Read the case carefully; create (in groups) another example of a fully complete sequence for WPL for an organisation of your choice according to Billett’s curriculum?
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FILIP DOCHY, DAVID GIJBELS, MIEN SEGERS & PIET VAN DEN BOSSCHE
David A. Kolb

- Professor of Organisational Behaviour
- Social psychologist

Interests:
- The nature of individual and social change
- Career development
- Executive and professional education
- Experiential learning
Experiential learning: experience as the source of learning and development’ (Kolb, 1984)

- Kolb Learning Style Inventory (LSI)
- Early 1970’s: The Experiential Learning Model, Kolb and Fry
The Experiential Learning Theory (ELT)

- Experience as central learning mechanism
- ‘Experiential’ → NOT:
  1) ‘Cognitive’ learning theories: tend to emphasize cognition over affect
  2) ‘Behavioural’ learning theories: deny any role for subjective experience in the learning process

**Six propositions:**

1. Learning is a *process*, not an outcome
2. All learning is *relearning*
3. Learning requires resolution of *conflicts between dialectically opposed modes of adaptation* to the world
4. Learning is a *holistic process of adaptation* to the world
5. Learning results from *synergetic transactions* between person and environment
6. Learning is the process of *creating knowledge*
The Experiential Learning Model (ELM)

- ELT defines learning as “the process whereby knowledge is created through the transformation of experience. Knowledge results from the combination of grasping and transforming experience” (Kolb, 1984)

- Two modes of grasping experience:
  - Concrete Experience (CE)
  - Abstract Conceptualization (AC)

- Two modes of transforming experience:
  - Reflective Observation (RO)
  - Active Experimentation (AE)

- Most of us develop an orientation towards one of the poles of each dimension…
The Four-Stage Learning Cycle (Kolb)

Concrete Experience (CE):
A person carrying out a particular action

Reflective Observation (RO):
Seeing and understanding the effect in this particular situation

Abstract Conceptualization (AC):
Deriving the general principle behind the effect of the action

Active Experimentation (AE):
Testing the implications over a range of new circumstances
- ELM: learning requires abilities that are polar opposites → the learner must continually choose

- In **grasping** experience:
  - some of us perceive new information through **Experiencing the Concrete (CE)** reality (sensation)
  - others tend to perceive information through **Abstract Conceptualization (AC)**: analyzing, thinking about, systematically planning, rather than using sensation as a guide

- In **transforming** – **processing** – experience:
  - some choose to jump right in and start doing things themselves → **Active Experimentation (AE)**
  - others watch people involved in an experience and reflect on what happens → **Reflective Observation (RO)**
- Concreet voorbeeld?
- Werkplekleren via Exp. L. Cycle?
David Boud on Reflection

Success of experiential learning depends heavily on reflection, thus becoming the central point of attention.

Observation and reflection as one of the key processes in learning from experience.
Conceptualising learning from experience: Developing a model

Figure 1. Model for promoting learning from experience

Boud and Walker 1990
Prior to the event: preparation

- Focus on the learner
  - What are the personal foundations of experience of the learner and his own specific goals and expectations on an event?

- Focus on the milieu
  - What are the possibilities for interaction and what can be changed?
During the event: experience

- Interaction between the learner and the milieu
  - *Noticing*, by which the person becomes aware of the milieu, or particular things within it, and uses this for the focus of reflection
  - *Intervening* refers to any action taken by the learner within the learning situation affecting the learning milieu or the learner

- = REFLECTION IN ACTION = D. Schon
Routledge Psychology in Education Series

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Donald A. Schön (1930-1997)
- The Reflective Practitioner
- The Learning Society
The best professionals know more than they can put into words.

Professionals rely more on the improvisation they have learned in practice or day-to-day activities, rather than on the theory they learned in graduate school.
There are two main themes in the theory of reflective practitioner:

Knowing-in-action

Reflection-in-action
Know-how doesn’t consist of any rules or plans which we can just recall from the mind before acting

“Knowing more than we can say”
THREE MAIN POINTS IN KNOWING:

- There are actions, recognitions and judgments which we don’t have to think about during the performance.
- We don’t notice that we have learned these things, we just find ourselves doing them.
- We are usually unable to describe the knowing which our action exposes.
We sometimes think about what we are doing

“Learning by doing”
Reflection-on-action:
we may think back on what we have done in order to
discover how our knowing-in-action may have contributed to an unexpected outcome

Reflection-in-action:
We may reflect during the action without interrupting it
REFLECTIVE PRACTICE: how does it work?

According to Schön:

“a professional practitioner is a specialist who meets certain kind of situations again and again” (Schön 1983)
Negative effects:

- it can make visions narrower
- the practitioner may not notice the opportunities to think about what he is doing
- “over-learning” (e.g. overreflecting)
Through reflection the practitioner can criticise and can make new sense of the situations of uncertainty.

Sometimes a practitioner can come up with a new model.
A practitioner sees a unique situation as something that is already present in his repertoire.

The familiar situation functions as a preliminary ruling, or a metaphor, or an exemplar for the unfamiliar one.
Two facts in the modern society:

- The increasing proportion of free time and the rapidity of change
- The loss of the stable state: means that society and all of its institutions are in continuous processes of transformation
We must try to adapt through transformations (e.g. 'hypes')

The task is to learn about learning (see: reflection)
Activity theory and Expansive learning at work by Yrjö Engeström
Yrjö Engeström

- Professor of Adult Education at University of Helsinki and Professor of Communication at University of California, San Diego
- Director of the Center for Activity Theory and Developmental Work Research
What is striking in expansive learning?

- Multidisciplinary approach
- Inter-organisational learning – minimal unit of analysis are two activity systems/units
- Innovation & change
- Knowledge that does not exist yet: new knowledge
Cultural-historical activity theory: framework for expansive learning

- initiated in 1920s & 1930s by revolutionary Russian psychologists
- existing theories of psychology inadequate to explain ‘transformation’ in human life
- basic concepts formulated by L. Vygotsky, A.N. Leont’ev & A.R. Luria
- mediated and object-oriented acts to explain the acts of human life
- three generations of research
First generation: mediated act

- centred on Vygotsky’s ideas

- focus on cultural mediation of actions:
  - presented as a triad of subject, object & mediating artefact
  - a human individual never reacts directly to environment
  - the relationship between human agent and object is mediated by cultural means, tools and signs

- limitation: unit of analyses remained relatively focused on the individual level
Second generation: distribution of work

- inspired by Leont’ev’s work

- crucial difference between individual action and collective activity

- distinction between activity, action & operation as basis of his three-level model of activity:
  - bottom level of automatic operations → tools and conditions of the actions at hand
  - middle level of individual or group action → a conscious goal
  - upper level of collective activity → an object-related motive
- the structure of a human activity system

- uppermost sub-triangle represents individual and group actions embedded in a collective activity system

- focus on complex interrelations between the individual subject and his community

- limitation: deeply insensitive toward cultural diversity
A physician in a hospital
Multi problem patient
One-year old boy
Already treated for food allergies
Suffering from acute breathing difficulties.
Patient visits the physician

**Instruments:**
Stethoscope, questions

**Subject:**
Physician

**Object:**
Patient and his father

**Outcome:**
Preliminary assessment

**Rules**

**Community:**
Physician and nurse

**Division of Labour:**
Nurse assists with the patient
Create your own application of a single activity system
Third generation: interactive activity systems as unit of analysis

- need to develop conceptual tools:
  - to understand dialogue, multiple perspectives and voices, and networks of activity systems

- the basic model is expanded:
  - two interacting activity systems as the minimal unit of analysis  - (“inter-organisational learning”)
**Subject**: individual/subgroup whose point of view is chosen

**Object**: ’raw material’/’problem space’ at which the activity is directed (client; customer)

**Artifacts**: external and internal instruments which transform the object into outcomes; includes tools and signs

**Community**: individuals/subgroups who share the same object and who construct themself as distinct from others

**Division of labour**: horizontal division of tasks, vertical division of power and status

**Rules**: explicit/implicit regulations, norms and conventions
The object of the activity

= moving target

The object moves from

- an initial state of unreflected, situationally given ‘raw material’ (patient entering a physician’s office)
- collectively meaningful object constructed by the activity system (activity system of the physician constructs the patient as a specimen of a biomedical disease category)
- a potentially shared or jointly constructed object (a shared constructed understanding of the care plan emerges)
The five principles of the current activity theory

1. Prime unit of analysis = activity system in its network to other activity systems
2. The multi-voicedness of activity systems
3. The historicity of activity systems
4. Role of contradictions (historically accumulating structural tensions) as sources of change and development
5. The possibility of expansive transformations in activity systems
A double bind is an emotionally distressing dilemma in communication in which an individual (or group) receives two or more conflicting messages, in which one message negates the other.

This creates a situation in which a successful response to one message results in a failed response to the other (and vice versa), so that the person will be automatically wrong regardless of response.

The double bind occurs when the person cannot confront the inherent dilemma, and therefore cannot resolve it or opt out of the situation.

For example, if your employer tells you to do a job, but doesn't allow enough time for you to do it, and you are in danger of losing your job if you question the situation, you are in a double bind.
Expansive learning can be described as the resolution of contradictions that the activity system faces and the construction of new forms of collaborative practices.

- Expansive learning begins when individuals start to question the existing practice, and it gradually expands into collective movement or institution.

- It ascends from abstract to concrete and is achieved through specific learning actions.

- At the same time, the cycle evolves continually producing new theoretical concepts.

> Together these actions form an expansive cycle or spiral.
Expansive cycle of learning actions

1. Questioning
2a. Historical analysis
2b. Actual-empirical analysis
3. Modelling the new solution
4. Examining the new model
5. Implementing the new model
6. Reflecting on the process
7. Consolidating the new practice
One example of a case:

- As journals and books have increasingly become available through the Internet, people seldom need to visit libraries physically. Libraries are becoming automatic mediators of digital information on the one hand, and physical book repositories or reading halls for people on the other hand.

- This threatens the professional competencies and jobs of librarians. The managers and workers of the libraries of many cities are struggling to redefine their work and services on the basis of creating partnerships and flexible practices of collaboration with groups in need of comprehensive design and maintenance of their information management. How can librarians and such groups learn to operate in such a new way?
Sequence of actions in an expansive learning cycle

1. Action of questioning
   The first action includes questioning, criticizing, or rejecting some aspects of the accepted and existing knowledge and practices.
Sequence of actions in an expansive learning cycle

2. Action of analysing
   Action of realizing “double bind” of the old activity by analysing the situation between history of the activity system and it’s current contradictions.

- **historical-genetic analysis**: seeks to explain the situation by tracing its origination and evolution.
- **actual-empirical analysis**: seeks to explain the situation by constructing a picture of its inner systemic relations.
Sequence of actions in an expansive learning cycle

3. Modelling the new solution
Constructing a simplified model of a new idea that explains and offers a solution to the problematic situation.

4. Examining the model
Running, operating, and experimenting on the model in order to fully grasp its dynamics, potentials, and limitations.

7. Consolidating the new practice

6. Reflecting on the process

5. Implementing the new model

4. Examining the new model

3. Modelling the new solution

2a. Historical analysis
2b. Actual-empirical analysis

1. Questioning
Sequence of actions in an expansive learning cycle

5. Implementing the model
   In the fifth phase the model is implemented and tested in a practical application.

6. Reflecting on the process
   Action of reflecting and evaluating the process.

7. Consolidating the new practice
   Final action is consolidating the new model as stable form of practice.
Important remarks:

- The theory of expansive learning has been applied mainly to large-scale transformations that might take 2-3 years or longer (multi-year macro cycles; succeeding miniature cycles of hours; Change Laboratory interventions).

- In reality, learning and development do not occur straightforward like the cycle illustrates but instead there can be movement back and forth between different phases.

- Also notable is that the development can decline or cease altogether and then the cycle of learning will not be expansive.
Case: Children´s health care

- In Helsinki, 15% of patients use 80% of all resources mostly because they are drifting between different caregiver organizations, children with multiple diagnoses are the most acute problem.

- How can different caregiver organizations collaboratively plan and monitor children´s health care? How to proceed when there is no readily available model that can fix the problem?

- Change laboratory method was used:
  - research and work development method that is based on the theories of activity theory and theory of expansive learning
  - aim is to speed up the cycle of expansive learning

- In this case 60 participants met 10 times for three hours: physicians, nurses, management etc. from different parties as well as patients parents, and of course researchers.
Case: expansive learning?

- Questioning
  - Troublesome patient cases
- Analyses
  - Finding and defining problems and contradictions
- Modelling
  - Debates leading to emerging new concept
- Examining the new model
  - Critical discussion about the new model
- Implementation, reflecting, consolidating

Change laboratory session in a Health Care setting
Case: involved activity systems and contradictions

Health Center

- **Subject:** general practitioner
- **Rules:** cost-effective care
- **Community:** nurse, health center staff
- **Tools:** care relationships
- **Object:** children moving between primary care and hospital
- **Division of labor:** between professions
- **Outcome:** gaps, overlaps and discoordinations

Children’s Hospital

- **Subject:** hospital physician
- **Rules:** cost-effective care
- **Community:** staff
- **Tools:** critical pathways
- **Object:** children moving between primary care and hospital
- **Division of labor:** between professions and specialties

Patient’s Family

- **Subject:** parents
- **Community:** family members, friends
- **Tools:**
- **Object:** chronically ill child with multiple problems
Outcomes of the case

- Work developmental aspect: the care agreement

- Research aspect:
  - Interest in co-configuration work
  - "Direction of learning": sideways learning
  - Conceptual tools: knotworking, negotiation, boundary crossing etc
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Verdere literatuur


Zie ook alle publicaties op http://paw.kuleuven.be/oe_en_o/pool