

Psychology in Education

Het gebruik van deze samenvatting is bedoeld als studeerhulp na het lezen van de verplichte literatuur. Gebruik van deze samenvatting is geheel voor eigen risico.

Soms wordt er verwezen naar bladzijden of tabellen in het originele boek.

Succes met studeren!



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Chapter 1 – Teachers, Teaching and Educational Psychology

Introduction

In a UK setting we are wary of using the term educational psychology as it can refer to the broad area of training and work of educational psychologists who apply psychological theories, research and techniques to help children and young people who may have learning difficulties, emotional or behavioural problems.

Educational psychologists:

- work with children and young people who experience difficulties to promote their development
- are employed mostly by education authorities (some are self-employed)
- work mainly in consultation with parents, teachers, social workers, doctors, etc.

The psychology of education is the study of how psychological theories and research inform and support the work of education professionals working across the whole range of teaching and learning settings.

National Standards of Attainment and *Every Child Matters*

Schools are being compared: an example of a government initiative attempting to provide parents with more information about standards and to promote what is seen as ‘good practice’ in schools.

Advanced Skills Teachers (ASTs): teachers who achieve or exceed their targets for pupil gains in public examinations (also known as leading teachers).

Every Child Matters: Change for Children (DfES, 2004) was a new approach in England to the well-being of children and young people from birth to age 19. The rights according to this approach: be healthy, stay safe, enjoy and achieve, make a positive contribution and achieve economic well-being.

Do Teachers Make a Difference?

For a while we thought that wealth and social status, not teaching, were the major factors determining who learned in schools.

Achievement of Black Caribbean pupils

Feyisa Demie identified teachers who had high expectations of their pupils, who created ‘a mesmerising curriculum’ using creative intuition to deepen the quality of pupils’ learning, who developed a highly inclusive curriculum, with strong links with the community, and who demonstrated a strong commitment to equal opportunities and a clear stand on racism. These teachers ensured that Black Caribbean pupils did well and bucked the national trend.

Collective teacher efficacy

Karen Parker and Elizabeth Hannah found a significant relationship between how teachers collectively felt they could make a difference and their children’s attainment in reading and writing (but not mathematics). Collective teacher efficacy appeared to have a much stronger independent impact than the children’s socioeconomic status.

Fifteen Thousand Hours

In *Fifteen Thousand Hours: Secondary Schools and their Effects on Children*, Rutter helps us to understand the impact of the smallest of teachers’ behaviours. It is clear that teachers can and do make a difference to the achievements of learners and their life chances (setting and checking of homework, disciplinary interventions in lessons, etc.).

What is Good Teaching?

Teachers must deal with a wide range of student abilities and challenges: different languages, different home situations and different abilities and disabilities. They must adapt instruction and assessment to pupils’ needs. They



must make the most abstract concepts real and understandable and they need to incorporate new connected technologies and techniques. They also take care of the emotional needs of their pupils.

Is teaching theory-based science, inventive art form or serendipity?

Because psychologists have spent their time on studying how children feel, learn, etc., we believe that teachers don't have to reinvent all this knowledge: teaching is a theory-based science.

Others think the mark of an excellent teacher is the artistry of being reflective – thoughtful and inventive – about teaching. According to this view teaching is so complex, it must be reinvented with every new lesson or class.

Beware of either/or choices

Most people agree that teachers must be both theoretically knowledgeable and practically inventive. Face to face with actual children who are particular ages and gender, culture and class, teachers must see individuals against a backdrop of sociological and psychological generalisations about groups'.

Expert knowledge

Expert teachers have elaborate systems of knowledge for understanding problems in teaching. For an expert teacher, wrong answers are part of a rich system of knowledge that could include how to recognise several types of wrong answers, the misunderstanding or lack of information behind each kind of mistake, the best way to re-teach and correct the misunderstanding, etc.

Expert teachers know:

1. The academic subjects they teach – their content knowledge is deep and inter-connected
2. General teaching strategies that apply in all subjects
3. The curriculum materials and programmes appropriate for their subject and grade level
4. Subject-specific knowledge for teaching: special ways of teaching certain pupils and particular concepts
5. The characteristics and cultural backgrounds of learners
6. The settings in which pupils learn
7. The goals and purposes of teaching

Key factor for expert teachers: to know their 'teacher-self': their personal biases, strengths and blind spots as well as personal cultural identity.

The Role of Educational Psychology

A look at history shows the close connections between educational psychology and teaching.

Some interesting history

1880s: psychology emerged, generally confined to teaching the subject and research in colleges and universities.

Mid-1900s: various strands of applied psychology emerged, including educational psychology. This book is concerned with the psychology of education, which studies learning and teaching in order to improve educational practice.

1940s & 1950s: the study concentrated on individual differences, assessment and learning behaviours.

1960s & 1970s: focus shifted to the study of cognitive development and learning, with attention to how individuals learn concepts and remember.

Recently: investigation how culture and social factors affect learning and development.

Is it just common sense?

- in reading lessons with five-year-olds, going around the circle in order and giving each child a chance to read led to better overall achievement than calling on children randomly
- when teachers provide help before learners ask, the learners and others watching are more likely to conclude that the helped learner does not have the ability to succeed

- for some learners, moving quickly through the material and working in advanced classes with older learners is a very good idea

Using research to understand and improve learning

Descriptive studies

Reports of descriptive studies often include survey results, interview responses, samples of actual classroom dialogue or audio and video records of the class activities. One approach is classroom ethnography: studying the naturally occurring events in the life of a group and trying to understand the meaning of these events to the people involved. Participant observation works within the class or school to understand the actions from the perspectives of the teacher and the learners. A case study investigates in depth how a teacher plans lessons, or how an individual tries to learn specific material.

Correlation studies

A correlation is a number (1.00 to -1.00) that indicates both the strength and the direction of a relationship between two events or measurements. Positive correlation indicates the two factors increase or decrease together. Negative correlation means that increases in one factor are related to decreases in the other. Correlations do not prove cause and effect!

Experimental studies

Experimentation allows educational psychologists to go beyond predictions and actually study cause and effect.

1. Number of comparable groups of participants are created
2. In one or more of these groups, some aspect of the situation is changed to see if this change has an expected effect
3. The results are then compared
4. When differences are described as statistically significant, it means that they probably did not happen simply by chance

Single-subject experimental designs

The goal is to determine the effects of a therapy or teaching method, or other intervention. Common approach: observe the individual for a baseline period (A) and assess the behaviour of interest: try an intervention (B) and note the results. Then remove the intervention and go back to baseline conditions (A): and finally reinstate the intervention (B) (ABAB experiment).

Microgenetic studies

Goal is to intensively study cognitive processes in the midst of change – as the change is actually happening. Three basic characteristics: (a) researchers observe the entire period of the change; (b) many observations are made (videotape recordings, interviews, transcriptions); (c) the behaviour that is observed is ‘put under a microscope’.

The role of time in research

Longitudinal studies: study the development by observing their subjects over many years as changes occur. Informative, time-consuming, expensive and not always practical. Cross-sectional: focusing on groups of children at different ages.

Teachers as researchers

Problem-solving investigation by teachers is called action research. By focusing on a specific problem and making careful observations, teachers can learn a great deal about both their teaching and their learners (“When does Oliver seem to have the greatest difficulty concentrating on academic tasks?”).

Theories for teaching



Research in educational psychology examines limited aspects of a situation. With enough studies, we eventually arrive at a principle: an established relationship between two or more factors – between a certain teaching strategy, for example, and learner achievement.

Another tool is a theory. In science, a theory is an interrelated set of concepts that is used to explain a body of data and to make predictions about the results of future experiments.

Chapter 2 – Cognitive Development and Language

A Definition of Development

Development in its most general psychological sense refers to certain changes that occur in human beings (or animals) between conception and death. It is applied to changes that appear in orderly ways and remain for a reasonably long period of time. Human development can be divided into a number of different aspects:

- Physical development: changes in the body
- Personal development: changes in an individual's personality
- Social development: changes in the way individuals relate to others
- Cognitive development: changes in thinking

Many changes are matters of growth and maturation: naturally and spontaneously, genetically programmed.

General principles of development

1. People develop at different rates.
2. Development is relatively orderly.
3. Development takes place gradually.

The brain and cognitive development

The developing brain: neurons

By the time we are born, we have all the neurons we will ever have, about 100 to 200 billion, and each neuron has about 2,500 synapses (tiny spaces between the fibre ends). By age 2 to 3, each neuron has around 15,000 synapses. Children are oversupplied: unused neurons will be 'pruned'.

Experience-expectant pruning (developing): synapses are overproduced in certain parts of the brain during certain developmental periods, awaiting (expecting) stimulation. Example: brain expects visual and auditory stimulation. This pruning is responsible for general development in large areas of the brain.

Experience-dependent pruning (learning): synaptic connections are formed based on the individual's experiences. Again, more synapses are produced than will be kept after 'pruning'. Experience-dependent processes are involved in individual learning, such as learning unfamiliar sound pronunciations in a second language you are studying.

The developing brain: cerebral cortex

The part of the cortex that controls physical motor movement matures first, then the areas that control complex senses such as vision and hearing, and last, the frontal lobe that controls higher-order thinking processes. The temporal lobes of the cortex that play major roles in emotions and language do not develop fully until the secondary school years and maybe later.

Specialisation and integration

Lateralisation: the specialisation of the two hemispheres of the brain. Each half of the brain controls the opposite side of the body. Before lateralisation, damage to one part of the cortex can often be overcome as other parts of the cortex take over the function of the damaged area, but after lateralisation the brain is less able to compensate. Remember, no mental activity is exclusively the work of a single part of the brain.

Learning and brain development

Bennett Shaywitz (2004): poor readers underused parts of their brains' left hemisphere and sometimes overused their right hemispheres. With intensive instruction in letter-sound combinations, the brains started to function more like those of the good readers and continued this functioning a year later.

Other studies show that children and adults with ADHD have smaller frontal lobes, basal ganglia and cerebellums than people without ADHD. These areas are involved with self-regulation of behaviour, coordination and control of motor behaviour.

Implications for teachers, caregivers and facilitators of learning

Marcy Driscoll (2005) draws these implications from the brain and learning:

1. Many cognitive functions are differentiated. Thus, learners are likely to have preferred modes of processing as well as different capabilities in these different modes. You should use different modalities for instruction.
2. The brain is relatively plastic, so enriched active environments and flexible instructional strategies will have a positive effect on the cognitive development in young children.
3. Some learning disorders may have a neurological basis, so neurological testing may assist in diagnosing, treating and evaluating the effects of treatments.

Piaget’s Theory of Cognitive Development

Piaget’s ideas provide an explanation of the development of thinking from infancy to adulthood.

Influences on development

According to Piaget, our thinking processes change radically, though slowly, from birth to maturity because we constantly strive to make sense of the world. Piaget identified four factors: biological maturation, activity, social experiences and equilibration.

Maturation is the most important one: we have little impact on this aspect of cognitive development, except to be sure that children get the nourishment and care they need to be healthy.

Activity comes with physical maturation. As we act on the environment - as we explore, test, observe and eventually organise information – we are likely to alter our thinking processes at the same time.

Without social experiences, we would need to reinvent all the knowledge already offered by our culture.

To equilibration we will return later.

Basic tendencies in thinking

Piaget concluded that all species inherit two basic tendencies: organisation (the combining, arranging, recombining and rearranging of behaviours and thoughts into coherent systems) and adaptation (adjusting to the environment).

Organisation

Very young children can look at an object or grasp it, but can’t do both things in a combination. Through organisation, they acquire the ability to do this. They use structures to do this: schemes according to Piaget.

They are organised systems of actions or thought that allow us to mentally represent or ‘think about’ the objects and events in our world. Schemes can be very specific, or very general.

Adaptation

- Assimilation: people use their existing schemes to make sense of events in their world (calling a fox a dog)
- Accommodation: a person must change existing schemes to respond to a new situation (adding foxes to their scheme for recognising foxes)

Equilibration

This is the act of searching for a balance. Piaget assumed that people continually test the adequacy of their thinking processes in order to achieve that balance. Briefly, equilibration works like this: if we apply a particular scheme to an event or situation and the scheme works: equilibrium. If the scheme does not produce a satisfying result: disequilibrium. The level of disequilibrium must be just right or optimal: too little and we aren’t interested in

changing, too much and we may be too anxious or not ready to change. To maintain a comfortable balance, we accommodate and assimilate.

Four stages of cognitive development

Piaget believed that all people pass through the same four stages: sensorimotor, preoperational, concrete operational and formal operational. Knowing a learner's age is never a guarantee that you know how the child will think.

Infancy: the sensorimotor stage (birth to two years approximately)

- The child's thinking involves seeing, hearing, moving, touching, tasting, etc.
- Infants develop object permanence.
- They begin with logical, goal-directed actions (learn how to empty a container).
- Basic accomplishment: learning to reverse actions.

The early childhood years: the preoperational stage (two to seven years approximately)

- Child is moving to mastery of operations, actions that are carried out and reversed mentally
- Major accomplishment: ability to form and use symbols (words, gestures): semiotic function.
- Children enlarge their vocabulary from about 200 to 2000 words.
- Difficulty with conservation.
- Children have the tendency to be egocentric: see the world from their own viewpoint (causes collective monologue).

Middle childhood: the concrete-operational stage (seven to eleven years approximately)

- recognition of the logical stability of the physical world
- the realisation that elements can be changed or transformed and still conserve many of their original characteristics and the understanding that these changes can be reversed
- Conservation: identity, compensation, reversibility
- Classification: England, Europe, Earth, Solar System, Milky Way, Universe
- Seriation: process of making an orderly arrangement from large to small or vice versa.
- Complete thinking system, but not yet able to reason about hypothetical, abstract problems.

Late childhood and adolescence: formal operations

- Formal operations: focus of thinking shifts from what is to what might be
- Hypothetico-deductive reasoning: consider a hypothetical situation and reason deductively.
- Adolescent egocentrism: adolescents become very focused on their own ideas

Do we all reach the fourth stage?

Piaget suggested that most adults may be able to use formal-operational thought in only a few areas where they have the greatest experience or interest.

Information-processing and neo-Piagetian views of cognitive development

Some developmental psychologists have formulated neo-Piagetian theories that retain Piaget's insights about children's construction of knowledge and the general trends in children's thinking, but add findings from information processing about the role of attention, memory and strategies.

Some limitations of Piaget's theory

The trouble with stages

There is the lack of consistency in children's thinking. For example, children can conserve number a year or two before they can conserve weight. Another problem is that the processes may be more continuous than they seem. Gradually developing changes in children can lead to large changes in abilities that appear to be abrupt.

Underestimating children's abilities

Piaget underestimated the cognitive abilities of children: the problems may have been too difficult. They appear to know more about number than Piaget originally thought.

Piaget's theory does not explain how even young children can perform at an advanced level in certain areas where they have highly developed knowledge and expertise (chess).

Cognitive development and culture

One last criticism of Piaget's theory is that it overlooks the important effects of the child's cultural and social group.

Vygotsky's Sociocultural Perspective

Psychologists today recognise that culture shapes cognitive development by determining what and how the child will learn about the world. The stages observed by Piaget are not necessarily 'natural' for all children because to some extent they reflect the expectations and activities of Western cultures.

Vygotsky believed that human activities take place in cultural settings and cannot be understood apart from these settings.

The social sources of individual thinking

Higher mental processes first are co-constructed during shared activities between the child and another person. Then the processes are internalised by the child and become part of that child's cognitive development. So for Vygotsky, social interaction was more than influence.

Both Piaget and Vygotsky emphasised the importance of social interactions in cognitive development, but Piaget saw a different role for interaction. He believed that interaction encouraged development by creating disequilibrium. Vygotsky, on the other hand, suggested that children's cognitive development is fostered by interactions with people who are more capable or advanced in their thinking.

Cultural tools and cognitive development

Psychological tools the culture provides: language, signs and symbols. Material tools are printing presses, rulers and the abacus (mobile phones). In Vygotsky's theory, language is the most important symbol system in the tool kit, and it is the one that helps to fill the kit with other tools.

The role of language and private speech

If we study language across cultures, we see that different cultures need and develop different language tools.

Language and cultural diversity

Vygotsky believed that thinking depends on speech, on the means of thinking, and on the child's socio-cultural experience. Vygotsky believed that language in the form of private speech guides cognitive development.

Private speech: Vygotsky's and Piaget's views compared

For Piaget, private speech was egocentric speech. For Vygotsky played these mutterings an important role in cognitive development by moving children toward self-regulation: the ability to plan, monitor and guide one's own thinking and problem solving. Private speech becomes eventually private thinking.

This series of steps from spoken words to silent inner speech is another example of how higher mental functions appear first between people as they communicate and regulate each others' behaviour, and then emerge again within the individual as cognitive processes.

Self-talk and learning

Because private speech helps learners to regulate their thinking, it makes sense to allow, and even encourage, pupils to use private speech in school. If muttering increases when working, it could be a sign that they need help.

The zone of proximal development

The zone of proximal development (ZPD) is the area between the child's current development level 'as determined by independent problem solving' and the level of development that the child could achieve 'through adult guidance or in collaboration with more capable peers'. Kathleen Berger (2006) called this area the 'magic middle' – somewhere between what the learner already knows and what the learner isn't ready to learn.

The role of learning and development

Piaget defined development as the active construction of knowledge and learning as the passive formation of associations. In contrast, Vygotsky believed that learning was an active process that does not have to wait for readiness. He saw learning as a tool in development – learning pull development up to higher levels and social interaction is a key in learning.

Limitations of Vygotsky's theory

- We may be born with a greater store of cognitive tools than either Piaget or Vygotsky suggested
- Vygotsky did not detail the cognitive processes underlying developmental changes – which cognitive processes allow learners to engage in more advanced and independent participation in social activities?
- Major limitation is that it consists mostly of general ideas
- He did not have time to detail the applications of his theories for teaching. Maybe the ideas don't stroke with what he thought.

Implications of Piaget's and Vygotsky's Theories for Teachers and Facilitators of Children's Learning

Piaget: what can we learn?

He believed that the main goal of education should be to help children learn how to learn so that they construct their own meanings and that education should 'form not furnish' the minds of learners.

Piaget has taught us that we can learn a great deal about how children think by listening carefully, by paying close attention to their ways of solving problems. If we understand children's thinking, we will be better able to match teaching methods to children's current knowledge and abilities.

Understanding and building on children's thinking

Teachers should determine whether children are having trouble because they lack the necessary thinking abilities or because they simply have not learned the basic facts. To do this, they should observe learners carefully as they try to solve the problems they have been presented with.

Implications of Piaget's theory for learning contexts

Setting up situations that lead to unexpected results can help create an appropriate level of disequilibrium. Often it makes sense to let pupils choose their own follow-up activities – with encouragement from the teacher to tackle challenges. Using multi-level lessons is called differentiated instruction.

Activity and constructing knowledge

Active experience, even at the earliest school levels, should not be limited to the physical manipulation of objects. It should also include mental manipulation of ideas that arise out of class projects or experiments (picture of a woman: doctor, sister, curly haired, etc.).

All learners need to interact with teachers and peers in order to test their thinking, to be challenged, to receive feedback and to watch how others work out problems.

The value of play

As children grow into adolescents, play continues to be part of their physical and social development.

Vygotsky: what can we learn?



There are at least three ways that cultural tools can be passed from one individual to another: imitative learning, instructed learning and collaborative learning. Vygotsky's ideas are relevant for those who teach directly and also create learning environments. One major aspect of teaching in either situation is assisted learning.

The role of adults and peers

Vygotsky believed that cognitive development occurs through the child's conversations and interactions with more capable members of the culture – adults or more able peers.

Scaffolding: support for learning and problem solving. The support could be clues, reminders, encouragement, breaking the problem down into steps, providing an example or anything else that allows the individual to grow in independence as a learner. The term aptly suggests that children use this help for support while they build a firm understanding that will eventually allow them to solve the problems on their own.

Assisted learning

Vygotsky's theory suggests that teachers, facilitators and caregivers need to do more than just arrange the environment so that children can discover on their own. Children cannot and should not be expected to reinvent or rediscover knowledge already available in their cultures. Rather, they should be guided and assisted in their learning. Assisted learning, or guided participation in the classroom, requires the scaffolding described above.

Teaching and the 'magic middle'

Both Piaget and Vygotsky probably would agree that learners need to be taught in the magic middle – where they are neither bored nor frustrated. Children should be put in situations where they have to reach to understand, but where support from peers or the teacher is also available. Sometimes the best teacher is another child who has just worked out how to solve the problem, because this child is probably operating in the learner's zone of proximal development.

Having a child work with someone who is just a bit better at the activity would also be a good idea – both learners should be encouraged to use language to organise their thinking and to talk about what they are trying to accomplish. Dialogue and discussion are important avenues to learning.

Chapter 3 – Personal, Social and Emotional Development

Physical Development

The preschool years

Preschool children are very active. Their large muscle skills improve greatly (from 2 to 5 years). Their balance improves as well and their centre of gravity moves lower: they can run, jump, climb and hop. With 'normal' kids, these developments occur naturally. Children with physical problems may need some help.

Fine-motor skills also improve greatly (such as tying shoes). They should practice with paintbrushes, pencils, etc. In this period, they develop a lifelong preference for their right or left hand. This is a genetically based preference which is best left to develop naturally.

The early school years

Children become taller, leaner and stronger: better able to master sports and games. They can however be much taller or smaller and still be perfectly healthy. In these years, from 11 to 14, girls are likely to be taller and heavier than boys of the same age.

Adolescence

Puberty is the beginning of sexual maturity. Girls begin their puberty between 10 and 11 and end it at 16, 17 years old. Boys start about two years later and end it when they're 18. Adolescents are physically and sexually mature years before they are psychologically or financially mature.

Boys who mature early are taller, broader-shouldered and because of that popular and leaders. They are, however, more often depressed and anxious and engage in more delinquent behaviour. This is due to the fact that they haven't had much time to grow into the social and sexual challenges of adolescence. Boys who mature late have a difficult time at first but benefit later.

For girls it is a definite disadvantage. It is associated with emotional difficulties such as depression, anxiety and eating disorders. Later-maturing girls seem to have fewer problems.

Bulimics often binge. Then, to avoid gaining weight, they force themselves to vomit, or they use strong laxatives, to purge themselves of the extra calories. Bulimics tend to maintain a normal weight, but their digestive systems can be permanently damaged.

Anorexia is an even more dangerous disorder, for anorexics either refuse to eat or eat practically nothing while often exercising obsessively. In the process, they may lose 20 per cent to 25 per cent of their body weight, and some (about 20 per cent) literally starve themselves to death.

The brain and adolescent development

Changes in the brain increase learners' computational skills as well as their ability to control behaviour in both low-stress and high-stress situations, to be more purposeful and organised and to inhibit impulsive behaviour. These are fully developed by the age of 20.

Teenagers need 9 hours of sleep each night, but their biological clock makes sure they don't fall asleep before midnight.

Adolescence is a critical period for the development of certain regions of the brain development (social cognition and self-awareness). Factors are environmental, hormonal and structural changes in the brain.

Freud: Stages of Individual Development

Sigmund Freud was a medical doctor, but became a psychologist. He described personality as a mechanism consisting of the id, the ego and the superego.

Id is present at birth, made up of the person's instinctive needs and desires (to maximise pleasure and minimise pain). The newborn infant's personality is solely the id (only need food, warmth and comfort).

Ego develops as the part of personality concerned with reality: the young child learns that smiling at mother is an effective way of gaining attention which may well result in their needs for food, warmth or comfort.

Superego is the moral, principled part of personality which acts as a kind of internalised parent, caregiver or teacher. Consists of conscience (punishes unacceptable thoughts/feelings) and the ego-ideal (sense of how we should aspire to behave).

Freud suggested that development occurs through a series of psychosexual stages (oral, anal, phallic, latency and genital). If these stages aren't being followed correctly, a person can become fixated at a certain stage or regress in certain situations.

Implications for those working with children

Criticisms on Freud: based his theories upon retrospective material and had little professional contact with children. Anna Freud and Melanie Klein said that a teacher should be a therapist as well. Teachers should aim to provide for the emotional needs of children by providing safe, inclusive learning environments and avoiding unnecessary frustrations.

Another aspect of psychoanalysis: transference. A child getting angry at a teacher, because they are angry at their parents.

Criticisms of Freud's theory

1. Freud's theory is untestable, difficult to prove or disprove, so little scientific value
2. Freud's ideas lack empirical evidence (experimental data): he tested his own patients (wealthy women) and then applied the theory to all humans
3. Freud's theory has no predictive value, which is part of the criteria applied to scientific research
4. Freud's theory is mainly based on his own subjective analysis and may well have been interpreted differently by other therapists

Attachment Theory

Attachment is formed between an infant and their caregivers during the first year of life. John Bowlby: need for attachment is an instinctive, biological need and mother love in infancy and childhood is very important for mental health. Bowlby was criticised for emphasising on monotropic attachment.

Ainsworth did research with 'strange situations': an unfamiliar room with toys with the departure and return of the mother. Her results were different attachment types:

1. Anxious/avoidant (not distressed when mother left, turn away when she returned)
2. Securely attached (distressed when mother left, easily comforted when she returned)
3. Anxious/resistant, anxious/ambivalent (very clingy, very distressed when mother left, seek comfort but also distance when she returned)

The caregiver should provide a secure base for the child. Then they are more likely to become independent earlier. Securely attached children are superior to insecurely attached children on a range of different measures including persistence when solving problems, social and cognitive competence, etc.

Erikson: The Individual and Society

Erikson offered (in *Childhood and Society* (1963)) a basic framework for understanding the needs of young people in relation to the society in which they grow, learn and later make their contributions. He made a psychosocial theory the emphasis laid on the emergence of the self, the search for identity, the individual's relationships with others and the role of culture throughout life. He agreed with Freud that every individual had a 'crisis' in every stage, where the individual must choose between two alternatives and which choice would have a lasting effect on his or her life.

The preschool years: trust, autonomy and initiative

Infants must trust the aspects of their world that are beyond their control. Trust versus mistrust is Erikson's first stage.

His second stage, autonomy versus shame and doubt, marks the beginning of self-control and self-confidence.

Parents must be protective, but not overprotective. Erikson believes that children who experience too much doubt at this stage will lack confidence in their own abilities throughout life.

The next stage is initiative versus guilt: it adds quality of undertaking, planning and attacking a task for the sake of being active to the second stage. Parents must provide supervision without interference. Children will otherwise think everything they do is wrong.

The early and middle school years: industry versus inferiority

The next stage involves a conflict between industry and inferiority. All changes now take place inside a school setting. They must learn to *trust* new adults, act *autonomously* in this more complex situation and *initiate* actions in ways that fit the new rules of school. Children are beginning to see the relationship between perseverance and the pleasure of a job completed. They have a growing sense of competence, but difficulty can result in feelings of inferiority.

Adolescence: the search for identity

With developing minds and bodies, young adolescents must confront the central issue of constructing an identity that will provide a firm basis for adulthood. The conflict defining this stage is identity versus role confusion.

Identity statuses

James Marcia: four identity alternatives for adolescents

1. Identity diffusion: occurs when individuals do not explore any options or commit to any actions. No firm direction. Apathetic, withdrawn, little hope for the future, maybe rebellious.
2. Identity foreclosure: commitment without exploration. Not experimente with different identities, simply committed to goals of others (usually their parents). Rigid, intolerant, dogmatic and defensive.
3. Moratorium: in the midst of struggling with choices. Exploration with a delay in commitment to personal choices. No longer referred to as a crisis, more a gradual exploration.
4. Identity achievement: after exploring realistic options, individual has made choices and is committed to pursuing them.

Identity, once achieved, may not be unchanging for everyone.

Beyond the school years

The stages of adulthood have again different crises. The first stage is intimacy versus isolation. Someone who has not achieved a sufficiently strong sense of identity tends to fear being overwhelmed or swallowed up by another person and may retreat into isolation.

The second stage is generativity versus stagnation. Generativity extends the ability to care for another person and involves concern and guidance for both the next generation and future generation.

The last stage is integrity versus despair. Achieving integrity means consolidating your sense of self and fully accepting its unique and now unalterable history.

Criticisms on Erikson: identity precedes intimacy according to him, but it was more likely for identity to be fused with intimacy. Erikson doesn't explore ethnic and racial identity.

Bronfenbrenner: The Social Context for Development

Urie Bronfenbrenner went further than Erikson by mapping the many interacting social contexts that affect development with his bioecological model of development. Bio: people bring their biological selves to the



developmental process. Ecological: the social contexts in which we develop are ecosystems. We live in a microsystem, inside a mesosystem, inside an exosystem, inside a macrosystem.

Microsystem: the person's immediate relationships and activities. These relationships are reciprocal.

Mesosystem: set of interactions and relationships among all the elements of the microsystem – the family members interacting with each other or with the teacher. Relationships are still reciprocal.

Exosystem: all the social settings that affect the child: teachers' relations with managers and the school governors, parents' jobs, etc.

Macrosystem: the larger society – its values, laws, conventions and traditions all of which influence the conditions and experiences of the child's life.

Lessons for teachers:

1. influences in ALL social systems are reciprocal
2. there are many dynamic forces that interact to create the context for individual development

Families

The best advice is to avoid the phrases 'your parents' and 'your mother and father' and to speak of 'your family' when talking to learners.

Parenting styles

Diane Baumrind (1991):

1. Authoritarian parents (low warmth, high control): seem cold and controlling, not much talk about emotions, punishments are strict but not abusive, not openly affectionate.
2. Authoritative parents (high warmth, high control) set clear limits, enforce rules and expect mature behaviour, but warmer. Listen to concerns, give reasons for rules and allow more democratic decisions. Less strict punishment, more guidance, help think through consequences of actions.
3. Permissive parents (high warmth, low control) warm and nurturing, few rules, expect little in the way of mature behaviour.
4. Rejecting/neglecting parents (low warmth, low control) don't seem to care at all, no controlling, communicating or caring.

Culture and parenting

Rejecting/neglecting parenting styles are harmful. Authoritative parents: children happy, relate well. Authoritarian parents: children guilty or depressed. Permissive parents: children have trouble interacting with peers.

Divorce

Even in those rare cases where there are few conflicts, ample resources and the continuing support of friends and extended family, divorce is never easy for anyone. First two years: problems in school or avoid school, lose or gain weight, have trouble sleeping or experience other difficulties.

Peers

Peer cultures

Peer cultures are groups of learners who have a set of 'rules' about such things as how to dress, talk of style their hair. To understand the power of peers, we have to look at situations where the values and interests of parents clash with those of peers, and then see whose influence dominates. Peer cultures are more powerful in defining issues of style and socialising. Parents and teachers still are influential in matters of morality, career choice and religion. In one study, 11- and 12-year-old learners without friends showed lower levels of academic achievement and positive social behaviours and were more emotionally distressed, even two years later, than children with at least one friend.

Who is likely to have problems with peers?

Part of being rejected is being too different from the norm. A teacher should be aware of how each learner gets along with the group. Are there outcasts? Do some individuals play the bully role? Careful adult intervention can often correct such problems, especially at the earlier school levels.

Peer aggression

Several forms. Instrumental aggression is intended to gain an object or privilege, such as shoving to get in line first or snatching a toy from another child. Hostile aggression inflicts intentional harm. This can take the form of overt aggression (threats or physical attacks) or relational aggression (threatening or damaging social relationships).

The debate on whether watching violent television increases aggression is still raging. Huesmann: Yes. When the children identified with aggressive television characters (they said they acted like those characters) and when they thought the violence on television was like real life, they were more likely to be violent as adults.

It is important to stress three points with children:

1. most people do not behave in the aggressive ways shown on television
2. the violent acts on television are not real, but are created by special effects and stunts
3. there are better ways to resolve conflicts, these are the ways most real people use to solve their problems

Using television as a reward or punishment isn't wise to do.

Bullies

Helping children handle aggression can make a lasting difference in their lives. Teacher-rated aggression when learners were age eight predicted school adjustment problems in early adolescence and long-term unemployment in adulthood.

One of the best approaches for preventing problems with aggression later in life is to intervene early. Sandra Graham: 12-session training to help aggressive boys become better judges of others' intentions.

Relational aggression

This is sometimes called social aggression because the intent is to harm social connections. Relational aggressors can be viewed as even more problematic than physical aggressors by teachers and other learners. As early as preschool, children need to learn how to negotiate social relations without resorting to aggression.

Victims

The first group of victims believe that they are rejected because they have character flaws that they cannot change or control. They are depressed and helpless. The second group is highly emotional and hot-tempered and provoke aggressive reactions from their peers. They are rejected by almost all peers and have few friends.

Loneliness and children with disabilities

Children with disabilities are more vulnerable for loneliness. They don't understand everything and might react in an inappropriate way and they aren't allowed full participation in class: less chance for them to form friendships. Pavri (2003) suggests that teachers intervene in these ways:

- Provide social skills training for all learners in how to initiate and terminate interactions and manage conflict
- Create opportunities for interactions through cooperative learning tasks, structured breaks and play times, peer tutoring opportunities and after-school activities such as boys' or girls' clubs or team sports
- Capitalise on lonely learners' talents and strengths – use these abilities in classwork
- Create an accepting classroom community
- Teach adaptive coping strategies such as engaging in creative activities when alone or initiating contact with others when lonely

- Enhance learners' self-esteem by giving them responsibilities in class and positive reinforcement for jobs well done

Teachers

Learning suffers when there are problems with personal and social development and teachers are the main adults in children's lives for many hours each week.

Academic and personal caring

Three key qualities of a 'good teacher':

- positive interpersonal relationships – they care about their learners
- keep the classroom organised and maintain authority without being rigid or unkind
- good motivators – they can make learning fun by being creative and innovative

We will now focus on teaching and caring. In short, caring means not giving up on learners and their learning as well as demonstrating and teaching kindness in the classroom.

Teachers and child abuse

It is part of the teacher's role to alert the head teacher or principal, school psychologist or school social worker if abuse is detected. It is important that teachers understand the laws in the country they are teaching in on this important issue, as well as their own moral responsibility.

Self-Concept: Understanding Ourselves

Self-concept and self-esteem

In psychology, self-concept generally refers to individuals' knowledge and beliefs about themselves – their ideas, feelings, attitudes and expectations. Our self-perceptions vary from situation to situation and from one phase of our lives to another.

Self-esteem is an affective reaction – an evaluative judgement of self-worth.

Self-concept is a cognitive structure, a belief about who you are. Self-esteem is sometimes considered one aspect of self-concept – the evaluative part.

The structure of self-concept

A learner's overall self-concept is made up of other, more specific concepts, including non-academic self-concepts about social relations or physical appearance. These concepts are divided in smaller categories as well. Self-concept is more situation-specific in adults.

How self-concept develops

Big-Fish-Little-Pond Effect (BFLP): children with good performance in maths on an average school feel better about their skills than children with the same performance in maths on a high-achieving school.

Self-concept and achievement

Many psychologists consider self-concept to be the foundation of both social and emotional development. They discuss the fact that pupils chose only the courses they could actually do in school: in which they had a positive self-concept.

School life and self-esteem

Teachers should ask two questions about self-esteem:

1. How does self-esteem affect a learner's behaviour in school? (it appears that learners with higher self-esteem are somewhat more likely to be successful in school)
2. How does life in school affect a learner's self-esteem? (still in debate, but overall school can have a positive influence if they work in good pairs)

Diversity and Identity

Diversity and perception of self

Self-esteem decreased slightly for both girls and boys in the transition to junior high. Boys' general self-esteem increased dramatically during their teen years, while girls' self-esteem stayed about the same, leaving girls with significantly lower general self-esteem than boys prior to leaving school. Decisions for courses appear to be made on 'illusions of incompetence', not ability.

Ethnic and racial identity

The exploration for identity when it comes to ethnicity, a longer moratorium in Erikson's words, is important: some psychologists consider ethnic identity a 'master status', one that dominates all other identity concerns when judging the self.

Ethnic identities: outcome and process

Jean Phinny describes four outcomes for ethnic minority youth in their search for identity:

- assimilation: fully adopting the values and behaviours of the majority culture and rejecting their ethnic culture
- separated: associating only with members of their ethnic culture
- marginality: living in the majority culture, but feeling alienated and uncomfortable in it and disconnected from the minority culture as well
- biculturalism (integration): maintaining ties to both cultures

Racial identity: outcome and process

Schools face a challenge in attempting to respect the range of views expressed. Determining a racial identity is complicated for biracial or multiracial adolescents. Some psychologists think that these challenges help multiracial youth develop stronger and more complex identities, but other researchers argue that the challenges are an extra burden in an already difficult process.

Racial and ethnic pride

Special efforts to encourage racial and ethnic pride are particularly important, so that learners examining their identities do not get the message that differences are deficits.

Emotional and Moral Development

Emotional competence

Beginning with the early interactions described by Murray and Trevarthen and developing throughout early childhood, children acquire the ability to interact effectively with those around them.

Theory of mind and intention

Theory of mind is an understanding that other people are people too, with their own minds, thoughts, feelings, beliefs, desires and perceptions. Children need this to make sense of other people's behaviour.

Moral development

Moral reasoning: their thinking about right and wrong and their active construction of moral judgements.

Distributive justice: beliefs about how to divide materials or privileges fairly among members of a group. Children learn that some should get more based on merit – they worked harder or performed better. They also learn

benevolence: some children get more time because they have special needs.

They also develop a state of moral realism: rules are absolute (example with three cups accidentally and one cup on purpose). Then they get morality of cooperation: people make rules and people can change them.

Kohlberg's theories of moral development

Lawrence Kohlberg experimented with moral dilemmas. The reasoning people show was the basis for Kohlberg's stages of moral reasoning. He divided moral development into three levels:

1. preconventional, where judgement is based solely on a person's own needs and perceptions
2. conventional, where the expectations of society and law are taken into account
3. postconventional, where judgements are based on abstract, more personal principles of justice that are not necessarily defined by society's laws

Criticisms of Kohlberg's theory

Firstly, in reality, the stages do not seem to be separate, sequenced and consistent. People often reason in several different stages simultaneously. Second, in everyday life, making moral choices involves more than reasoning. Emotions, for example, also affect choices.

Gender differences: the morality of caring

Another big criticism was that his study was based on American men only.

Research has shown that men and women don't differ that much: justice and caring seem to be important bases for moral reasoning for both genders.

Moral judgements, social conventions and personal choices

Social conventions are agreed-upon rules and ways of doing things in a particular situation. Children's thinking and reasoning develops across all domains, but the pace of development may not be the same in every area.

Moral vs. conventional domains

In the moral domain, children move through the following stages:

- a sense that justice means equal treatment for all
- an appreciation of equity and special needs
- a more abstract integration of equity and equality along with a sense of caring in social relations
- a sense as adults that morality involves beneficence and fairness and that moral principles are independent of the norms of any particular group

Conventional domain:

- believing that the regularities they see are real and right
- see the exceptions and realise that conventions are arbitrary
- understand that rules, even though they are arbitrary, are made to maintain order and that people in charge make the rules
- begin to question these rules
- realise that conventions are useful in coordinating social life, but changeable, too

Implications for teachers

Responses to moral issues:

1. "John, that really hurt Jamal"
2. "Nicola, how would you feel if someone stole from you?"

Responses to conventional issues:

1. "Lisa, you are not allowed to be out of your seat during registration."
2. "Patrick, stop swearing!"

Moral behaviour



The relationship between moral reasoning and moral behaviour is not very strong. Three important influences on moral behaviour are modelling, internalisation and self concept:

1. children who have been consistently exposed to caring, generous adult models will tend to be more concerned for the rights and feelings of others
2. most theories of moral behaviour assume that young children's moral behaviour is first controlled by others through direct instruction, supervision, rewards and punishments and correction. In time, children internalise the moral rules and principles of the authority figures who have guided them: that is, children adopt the external standards as their own
3. we must integrate moral beliefs and values into our total sense of who we are or our self-concept

Cheating

Early research indicates that cheating seems to have more to do with the particular situation than with the general honesty or dishonesty of the individual. The implications for teachers are straightforward. To prevent cheating, they should try to avoid putting learners in high-pressure situations. There should be focus on learning and not on grades, and encouragement to collaborate on assignments. Further, learners should know that they will be carefully watched throughout exams so that they are discouraged from attempting to cheat.

Chapter 4 – Learner Differences and Learning Needs

Individual Differences in Intelligence

The concept of intelligence is very important in education, very controversial and very often misunderstood in terms of how it is defined and measured.

Learner differences and labelling

A label does not tell which methods to use with individual learners. Few specific ‘treatments’ automatically follow from a ‘diagnosis’ of intellectual disabilities; many different teaching strategies and materials are appropriate. Labels can become self-fulfilling prophecies and everyone may see a label as a stigma that cannot be changed. Finally, labels are mistaken for explanations.

Labels also ‘protects’ a child. They probably both stigmatise and help learners.

Person-first language

An individual has many abilities, so it is misrepresenting the individual to focus on the disability (mentally handicapped, for instance). That’s why we use ‘person-first’ language: A girl with autism, NOT an autistic girl.

Disorders, disabilities and handicaps

Disorder: general disturbance in physical or mental functioning (communications disorder). Disability: an inability to do something specific (pronounce words, see, walk). Handicap: disadvantage in certain situations.

What does intelligence mean?

Early studies said intelligence involved three themes:

1. the capacity to learn
2. the total knowledge a person has acquired
3. the ability to adapt successful to new situations and to the environment in general

Now still a good starting point: most important are the higher-level thinking processes such as abstract reasoning and problem solving. They added metacognition and executive processes (monitoring your own thinking).

Intelligence: one ability or many?

Charles Spearman (1927) suggested there is one mental attribute, g or general intelligence, used to perform any mental test, but each test also requires some specific abilities in addition to g. Individuals vary in both general intelligence and specific abilities.

Cattell-Horn theory: fluid and crystallised intelligence. Fluid intelligence is mental efficiency that is essentially culture-free and non-verbal (think or act quickly). Grows with the brain development, but declines gradually with age. Sensitive to injuries. Nature.

Crystallised intelligens is the ability to apply culturally approved problem-solving methods, can increase throughout the life span because it includes the learned skills and knowledge. Nurture.

Carroll argues that there is a hierarchical structure for intelligence: starting with g and ending with more specific abilities.

Multiple intelligences

Gardner’s theory of multiple intelligences: there are at least eight separate intelligences:

- linguistic (verbal)
- musical
- spatial

- logical-mathematical
- bodily-kinesthetic (movement)
- interpersonal (understanding others)
- intrapersonal (understanding self)
- naturalist (observing and understanding natural and human-made patterns and systems)

Gardner based this on braindamage to a particular part of the brain and on the fact that people can be outstanding in one of these eight areas, but score mediocre in the other parts.

What are these intelligences?

Gardner says an intelligence is the ability to solve problems and create products or outcomes that are valued by a culture. According to Gardner, an individual may or may not develop their potential intelligence depending upon environmental experiences.

The theory is still developing: there may be connections among the intelligences (which some researchers call abilities or talents).

Multiple intelligences go to school

There is not yet strong evidence that adopting a multiple intelligences approach will enhance learning. Learning is still hard work, even with 8 paths to follow.

What is EQ?

Key abilities for emotional intelligence (EQ): perceiving, integrating, understanding and managing emotions. Some researchers say it is not a cluster of capabilities, but rather a set of personality traits or the application of general intelligence to social situations. The major point is that success in life requires more than cognitive skills, and teachers are important influences in helping pupils develop all of these capabilities.

EQ goes to school

Programmes designed to help children build their emotional competencies have beneficial effects, including an increase in cooperative behaviours and a reduction in anti-social activities. The educational advantages of decreased pupil aggression and increased empathy are obvious, but these skills also prepare children and young people for life outside the classroom.

Cautions

Many reports use the term 'emotional intelligence' loosely or inaccurately, causing misunderstanding. Make sure that the sources you read are based on careful research, not popular opinion.

Intelligence as a process

The previous names investigated the differences between individuals in the content of intelligence. There are also researchers, however, who emphasise the thinking processes that may be common to all people.

Robert Sternberg's triarchic theory of successful intelligence: there are three aspects involved. According to him, 'Successful intelligence' includes the skills and knowledge needed for success in life, according to one's own definition of success, within one's own sociocultural context.

1. Analytic/componential intelligence: the mental processes that lead to more or less intelligent behaviour. Different kind of components are used here.
2. Creative/experiential intelligence: coping with new experiences. (intelligent behaviour is a combination of insight and automaticity)
3. Practical/contextual intelligence: highlights the importance of choosing to live and work in a context where success is likely

Binet's dilemma



Binet had to figure out how they could know children would fail in regular classes before they actually did so. He made, with Theodore Simon, tests to determine a mental age for a child.

The concept of intelligence quotient (IQ) was added afterwards. The formula: $IQ = \text{mental age} / \text{chronological age} * 100$. The problem with this was that the IQ scores based on mental age didn't have the same meaning as children got older. Deviation IQ: how much better/worse are you than the average person?

Group versus individual IQ tests

Stanford-Binet test is individual, orally taken. Group tests are available now as well, but they aren't as accurate. Teachers should be very wary of IQ scores based on group tests.

What does an IQ score mean?

100 is the mean, with a standard deviation of 15 (68% of the people has an IQ between 85 and 115).

The Flynn effect: are we getting more intelligent?

IQ scores have been rising: in a generation, the average score goes up about 18 points on standardised IQ tests. This is called the Flynn effect. There can be a lot of different explanations. The norms used to determine scores have to be continually revised now.

Intelligence and achievement

The correlation between school grades and scores on a popular individual intelligence test, the revised Wechsler Intelligence Scale for Children (WISC-III) is 0.4 to 0.5. The correlation between standardised achievement test and intelligence test is even higher.

G appears to correlate with 'real-world academic, social and occupational accomplishments', but there is great debate about the size and meaning. Other factors such as motivation, social skills and luck may make the difference.

Intelligence: heredity or environment?

It is almost impossible to separate intelligence 'in the genes' from intelligence 'due to experience'. Genes do not fix behaviour. Rather they establish a range of possible reactions to the range of possible experiences that the environment can provide.

Ability Differences and Teaching

Streaming or between-class ability grouping

This is when whole classes are formed based on ability. Streaming is based on the idea that learners have fairly fixed levels of ability. 11+ system: children in different schools based on their abilities.

Research about ability grouping:

US: ability grouping benefits high-achieving learners, but causes a number of problems for low-achieving learners. The low-ability groups tend to receive lower-quality instruction in general.

Within-class ability grouping and flexible grouping

The point of any grouping strategy should be to provide appropriate challenge and support – that is, to reach children within their 'zone of proximal development'. Ability grouping which is flexible seems to work best.

Learning Styles and Preferences

The way a person approaches learning and studying is known as their learning style. Deep-processing approach: see the learning activities as a means for understanding some underlying concepts or meanings. Surface-processing approach: focus on memorising the learning materials, not understanding them.

Cautions about learning preferences

Learning preferences are often called learning styles in these writings, but preferences is a more accurate label because the 'styles' are determined by your preferences for particular learning environments.

Tests of learning style have been strongly criticised for lacking evidence of reliability and validity.

It is worth remembering that learners, especially younger ones, may not be the best judges of how they should learn. Sometimes, learners, particularly those who have difficulty, prefer what is easy and comfortable; real learning can be hard and uncomfortable.

Visual/verbal distinctions

Richard Mayer did research about the use of multimedia in learning: the difference between visual and verbal learners. There are three components:

1. cognitive spatial ability (which is measured to find whether low or high)
2. cognitive style (visualiser v. verbaliser)
3. learning preference (verbal learner v. visual learner)

The value of considering learning styles

Benefits of thinking about learning styles:

- by helping learners to think about it, you can develop thoughtful self-monitoring and self-awareness
- looking at different approaches might help teachers appreciate, accept and accommodate learner differences

Inclusion

Inclusion is the integration of all learners into mainstream classes. The Special Educational Needs and Disability Act (SENDA) made discrimination against learners with disabilities illegal. Changes they want to make to SENDA:

- choice of school given to parents (mainstream and/or special school)
- children with SEN identified through a single category based either in an Early Years or school setting
- local offers provided by LEAs and other services
- more independence given to SEN assessments

The Code of Practice

The Code emphasises that children with special educational needs, including those with statements (support plans already in place as a result of formal assessment usually by educational psychologists) should normally:

- be educated alongside other children in mainstream schools
- have full access to a broad and balanced education including the National Curriculum

Additionally, the role of the parents in terms of their knowledge, views and experience are seen as vital and tasks of assessing and meeting the needs of the children are seen as most successful when:

- the school, the LA and other professionals work in partnership with parents
- a child's wishes are taken into account in the light of their age and understanding
- there is close cooperation between all agencies concerned and a multi-disciplinary approach is taken to resolving issues

What to do with children with SEN?

1. Identification: class teacher identifies a child's SEN
2. School Action: school informs everyone, SENCO gathers information and draws an IEP
3. School Action Plus: SENCO brings in outside specialists
4. Statutory Assessment: LA considers need for statutory assessment
5. Issuing a Statement: LA considers need for SEN statement

Individual Education Plan

Strategies that are used to facilitate the child to progress should be included within the IEP and these should only record those which are different from or additional to those provided for the rest of the class or teaching group.

Further points:

- short-term targets set for/by the child
- teaching strategies to be used
- provision to be put in place
- review date
- success and/or exit criteria
- outcomes (recorded at the review)

The IEP should be reviewed at least twice a year (arranged by class teacher) and should include parental/family views as well as where possible the child's own input.

The Most Common Challenges

Pupils with learning difficulties/disabilities

Learning difficulty/disability:

- a significantly reduced ability to understand new or complex information, to learn new skills (impaired intelligence), with:
 - a reduced ability to cope independently (impaired social functioning)
 - which started before adulthood, with a lasting effect on development

Some researchers say these terms are overused and abused, there could be much more explanations for slow learning of some children.

Learner characteristics

Individuals with learning difficulties/disabilities often lack effective way of approaching academic tasks. They tend to be passive learners, in part because they don't know how to learn. Early diagnosis is important so they do not become terribly frustrated and discouraged. When the learners don't understand why they are having such trouble, they become victims of learned helplessness (example with the animals who first couldn't escape electric shocks).

Teaching pupils with learning difficulties/disabilities

A promising approach seems to be to emphasise study skills and methods for processing information in a given subject such as reading or mathematics. In teaching reading, a combination of teaching letter-sound knowledge and word identification strategies appears to be effective.

Learners with hyperactivity and attention disorders

Hyperactivity is not one particular condition, but two kinds of problems that may or may not occur together – attention disorders and impulsive-hyperactivity problems.

Definitions

Children with ADHD:

- more physically active and inattentive than other children
- difficulty responding appropriately and working steadily towards goals
- may not be able to control their behaviour on command, even for a brief period

Causes of ADHD

With ADHD, strong genetic factors are involved. Although factors such as family environment, parental management skills and stressful life events influence the lives of those individuals with ADHD, they are not enough, in themselves, to cause the disorder.

Treating and teaching learners with ADHD

Treatment with medicine (Ritalin) has good effects on the short-term, but there are negative sides as well for many: increased heart rate and blood pressure. The improvements only account for their behaviour, not for their academic learning or peer relationships.

Long assignments are too heavy for children with ADHD: a few problems or paragraphs at a time should do. They also should be encouraged to be persistent and to see themselves as 'in control'.

David Nylund wants to enlist the child's strengths to conquer the child's problems – put the child in control. He uses the SMART approach:

- Separating the problem of ADHD from the child
- Mapping the influence of ADHD on the child and family
- Attending to the exceptions to the ADHD story
- Reclaiming special abilities of children diagnosed with ADHD
- Telling and celebrating the new story

Learners with dyslexia, dyspraxia and dyscalculia

Dyslexia: learning difficulty which involves problems with literacy. There is continued debate about the causes (and even existence) of dyslexia but most agree that the areas of the brain associated with language processing are involved.

Teaching learners with dyslexia

Wave 1: children who struggle to keep up with standard lessons

Wave 2: small groups for teaching at a slower pace and with more individual attention

Wave 3: children who still do not catch up with their peers (they are given an individually targeted intervention)

Dyspraxia: impairment of the way movement is organised and pupils with this disorder often appear clumsy. There are often difficulties of coordination and balance as well as problems mastering, retaining and generalising gross- and fine-motor skills.

Dyscalculia: condition that affects the ability to acquire arithmetical skills. Dyscalculia is thought to occur as a result of failure of certain brain areas to develop properly and this causes a failure to represent and process numbers in a normal way.

Teaching learners with dyscalculia

Teaching mathematics in small group work and whole-class discussions is thought to have had a positive impact upon numeracy teaching for children with special educational needs, but those children with dyscalculia struggle with the daily mathematics lessons and may benefit from individual teaching. There is no specific support for children with dyscalculia beyond primary schools.

Learners with communication difficulties

Speech and language difficulties

Specific speech and language difficulties (SSLD); primary language problem which is not explained by hearing loss, intellectual impairment or lack of language exposure. Articulation disorder: substituting one sound for another (thunthine for sunshine), distorting a sound (shoup for soup), adding a sound (ideer for idea), or omitting sounds (po- y for pony). Stuttering happens generally between the ages of 3 and 4. If it continues more than a year or so, the



child should be referred to a speech therapist. Voicing problems: speaking with an inappropriate pitch, quality of loudness, or in a monotone.

Language disorders

Learners with language disorders are those who are markedly deficient in their ability to understand or express language, compared with other pupils of their own age and cultural group.

Learners with intellectual disabilities

Intellectual disability is an alternative name for learning difficulty/disability but is used infrequently in the UK (formerly known as mental retardation).

Learners with emotional or behavioural disorders

Behavioural disorders are behaviours that deviate so much from the norm that they interfere with the child's own growth and development and/or the lives of others. Because learners with emotional and behavioural disorders frequently break rules and push the limits, teachers often find themselves disciplining them. Teachers are usually advised by the SENCO.

Suicide

Suicide often comes as a response to life problems – problems that parents and teachers sometimes dismiss. Professionals and families should watch for changes in eating or sleeping habits, weight, grades at school or college, disposition, activity level, interest in friends or activities that were once fun. If those working with an individual suspect that there is a problem, it is advisable to talk to them directly.

Drug abuse

The best way to help pupils who have trouble saying no appears to be through peer programmes that teach them how to say no assertively. The older people are when they experiment with drugs, the more likely they are to make responsible choices, so helping younger people say no is a clear benefit.

Less Prevalent Problems and More Severe Disabilities

Learners with health impairments

If the school has the necessary architectural features, such as ramps, lifts and accessible rest rooms, and if teachers allow for the physical limitations of learners little needs to be done to alter the usual educational programme.

Cerebral palsy and multiple disabilities

The most common form of cerebral palsy is characterised by spasticity. Many children with cerebral palsy also have secondary disabilities and in the classroom they are the greatest concern.

Seizure disorders (epilepsy)

A seizure is a cluster of behaviours that occurs in response to abnormal neurochemical activities in the brain. If a learner has a seizure accompanied by convulsions in class, the teacher must take action so the person will not be injured.

Learners who are deaf or hard of hearing

The trend is to combine oral and manual approaches: make them 'bilingual'.

Learners who are blind or partially sighted

For learners with visual problems, the quality of the print is often more important than the size, so care should be taken with handouts. The arrangement of the room is also an issue. Learners with visual problems need to know where things are, so consistency matters.

Learners with autism spectrum disorders and Asperger's syndrome

Autism spectrum disorders

This term is used here to emphasise that autism includes a range of disorders from mild to major. Asperger's/Asperger syndrome is one of the disabilities included in the autistic spectrum. Their greatest trouble is with social relations.

Theory of mind

A current explanation for autism and Asperger's syndrome is that children with these disorders lack a theory of mind. So, for example, a learner may not understand why classmates are bored by his constant repetition of stories or obscure facts about topics he finds fascinating.

Interventions

Early and intense interventions that focus on communication and social relations are particularly important for children with autism spectrum disorders. Collaboration among teachers and the family is particularly important for these learners.

Learners Who Are Gifted and Talented

In the past, providing an enriched education for extremely bright or talented learners was seen as undemocratic and elitist. Now, there is a growing recognition that gifted children are being poorly served by many schools.

Who are these learners?

Renzulli and Reis's conception of giftedness:

- above-average general ability
- high level of creativity
- high level of task commitment or motivation to achieve

What is the origin of these gifts?

Gifted children, child prodigies and savants are not made from scratch but are born with unusual brains that enable rapid learning in a particular domain. The influence of parents and hard work are both very important factors, nevertheless.

What problems do the gifted face?

Gifted adolescents, especially girls, are more likely to be depressed and to report social and emotional problems. Adjustment problems seem to be greatest for the most gifted, those in the highest range of academic ability.

Strategies for identifying and teaching gifted learners

Recognising gifts and talents

Teachers aren't very often successful in picking out gifted learners. Major sources of information for identifying gifted and talented children include information from parents, peers and the learners themselves. Many psychologists recommend a case study approach to identifying gifted children.

It is worth remembering that learners with remarkable abilities in one area may have much less impressive abilities in others.

Teaching gifted learners

Many educationalists object to acceleration because of the fear that this practice might deprive learners of social and emotional interactions with children of their own age. However, studies show this isn't true: socially they are not impaired.

Chapter 5 – Culture and Diversity

Today's Diverse Classrooms

In this chapter there are many references to families and children living in poverty, but we have to recognize the differences between characteristics of poverty in the developed world and developing world, and that the term 'poverty' is relative to the geographical context. We will continue to accept the definition of poverty as income below 60 per cent of the median family income after housing costs, but only in the context of the developed world.

Individuals, groups and society

Tariq Modood makes a useful distinction between:

- Assimilation: newcomers 'become as much like their new compatriots as possible'
- Integration: members of the majority community as well as immigrants and ethnic minorities are required to become more like each other
- Multiculturalism: processes of integration work differently for different groups

1960s and 1970s: educators suggested that coloured children and children from low-income backgrounds had problems because they were culturally disadvantaged → cultural deficit model (attempts to explain school achievement problems ethnic minority pupils). Main idea: home culture didn't prepare the children for school. This idea of a cultural deficit isn't real anymore for psychologists.

Another thing happening in the 1960s and 1970s: people wished to maintain their culture and identity.

Multiculturalism was the goal.

Multicultural education

This is, according to Lemmer and Squelch, the transferring of the recognition of our culturally pluralistic society into our educational system. Furthermore, multicultural education is the operationalization of the education system in such a fashion that it appropriately and in a rightful manner includes all racial and cultural groups in a process which guides the total education enterprise.

Be aware that there is no general agreement about the 'best' approach! Multicultural education rejects the idea of the melting pot and supports a society that values diversity.

Cultural diversity

Culture and group membership

Each of us is a member of many groups, so we all are influenced by many different cultures and sometimes, the influences are incompatible or even contradictory.

Cautions in interpreting cultural differences

We will consider social class, ethnicity and gender separately, because much of the available research focuses on just one of these variables. Of course, real children are much more complex.

It is an understandable fault of many practitioners to consider the social roots of the learner as an indicator of future academic performance.

Economic and Social Class Differences

Social class and SES

Sociologists and psychologists combine variations in wealth, power, control over resources and prestige into an index called socioeconomic status (SES). Whatever the process of ascribing a status to groups or individuals, most researchers identify four general levels of SES: upper, middle, working and lower classes.

Poverty and school achievement

The Programme for International Student Assessment (PISA)

PISA is a three-yearly survey of the knowledge and skills of 15-year-olds in the principal industrialised countries: according to that, proficiency in reading, mathematics and science is associated with the following characteristics:

- Having parents with high socioeconomic status occupations
- Attending an independent school
- Attending a single-sex school
- Speaking English at home
- Having parents with qualifications at upper secondary level or higher
- Being an only child or having only one sibling
- Being a girl
- Living with both natural parents

Health, environment and stress

Poor people experience serious deprivations and stress: lack of food; electricity, gas and water disconnections due to unpaid bills; crowded or substandard housing, or lack of a cooker or refrigerator. Stress creates violence and violence has serious physical and psychological effects.

Children in poverty are more likely to become a parent at a very young age, to be exposed to both legal drugs and illegal drugs before birth, etc.

Low expectations – low academic self-image

Teachers may think children are less intelligent due to how they look. Over time, low expectations become institutionalized, additional educational resources provided are inadequate and ultimately, poor children come to believe that they aren't very good at schoolwork.

Parents of low SES are less likely to believe that school offers real opportunities for social and economic advancement for their children. Low-SES children, particularly those who also encounter racial discrimination, become convinced that attending school is a waste of time and effort, and that any investment of time and effort should be made elsewhere.

Peer influences and resistance cultures

Members of a resistance culture think success in school means 'selling out' by trying to act 'middle class'. That's why they can't try hard to achieve in order to maintain their identity: they want to remain 'low-SES children'.

Streaming

Streaming means the grouping of children by ability. Streaming causes the children to be taught differently. The differences between teaching higher- and lower-ability groups are sometimes obvious (slower pace), but sometimes also something to worry about: Page (1984) suggested that streaming sets in motion a 'vicious cycle'.

Home environment and resources

The home and neighborhood resources (less access to books, computers, libraries for example) seem to have the greatest impact on children's achievement when school is not in session – during the summer or before pupils enter school. Davies and Kerry (1999) found that low-SES pupils lost ground during summer while the high-SES pupils continued to improve academically.

Ethnic and Racial Differences

Ethnicity is used to refer to groups that identify with each other culturally, with respect to religion, language, food, music, and so on. Race, on the other hand, is a term with a long history in social discourse and subject to a good deal of definitional diversity.

Richard Lewontin pointed out that 85 per cent of human genetic diversity occurred within rather than between populations, and only 6-10 per cent of diversity is associated with broadly defined races. What is clear is that the

term race needs to be used with some care and Lewontin's conclusions are not without their critics, particularly among those with strongly held sociopolitical beliefs.

Minority group; group of people that receives unequal or discriminatory treatment. Can be misleading.

The changing demographics: cultural differences

Ricardo Garcia compares culture to an iceberg. One-third of the iceberg is visible: the rest is hidden and unknown. Some psychologists suggest that culture defines intelligence (example of physical grace in Balinese). It would be wrong, though, to assume that every member of a cultural group is identical in beliefs, actions or values.

Cultural conflicts

Cultural conflicts are usually about below-the-surface differences, because when subtle cultural differences meet, misunderstandings are common. These conflicts can happen when the values and competencies of the dominant, mainstream culture are used to determine what is considered 'normal' or appropriate behavior in schools.

Ethnic and racial differences in school achievement

Although there are consistent differences among ethnic groups on tests of cognitive abilities, we would assert that these differences are mainly the legacy of discrimination, the product of cultural mismatches or a result of growing up in a low-SES environment. When we compare pupils from different ethnic and racial groups who are all at the same SES level, then their achievement differences diminish.

The legacy of discrimination

What is prejudice?

This is a rigid and irrational generalization – a prejudgement – about an entire category of people.

The development of prejudice

Drew Nesdale (2001) concludes that children's ethnic preferences are well established by six years of age and children may express racist statements towards ethnic 'out-groups' by five years of age. One source of prejudice is the human tendency to divide the social world into two categories – us and them. We tend to see members of the out-group as inferior and different from us, but similar to each other. Emotions play a part as well. When things go wrong, we look for someone or some whole group to blame. Prejudice is difficult to combat because it can be part of our thinking processes.

A stereotype can be seen as a schema that organizes what you know (and believe) about the group.

Continuing discrimination

Discrimination is unequal treatment of particular categories of people. In school, children from ethnic minorities are chosen less often for gifted classes and acceleration or enrichment programmes. They are more likely to be streamed into 'basic skills' classes. As they progress through secondary school or college their paths take them farther and farther out of the 'academic pipeline' that produces our scientists, mathematicians and engineers. If they do persist and become scientists or engineers, they, along with women, will still be paid less than white male employees for the same work.

Stereotype threat

This is the risk of confirming a negative stereotypic expectation about one's group. People can bear, in situations where a stereotype applies, an emotional and cognitive burden: possibility of confirming the stereotype. Christian Crandall (2003) says it is not necessary that the individual even believes the stereotype.

Short-term effects: test performance

Stereotypic reputations can undermine performance on intellectual testing beyond any actual differences in cognitive ability. Why does stereotype threat affect test performance? One link is anxiety.

Long-term effects: dis-identification

There is some evidence that black male pupils are more likely than black female pupils and white pupils to dis-identify with academic attainment – that is, to separate their sense of self-esteem from their academic achievement. The message for teachers is to help all pupils see academic achievement as part of their ethnic, racial and gender identity.

Combating stereotype threat

Self-belief is an important factor in pupil's achievement. There is also evidence that self-suggestion can play an important role if targeted interventions are persuasive and authentic. Psychologist Joshua Aronson experimented with writing letters to middle-school pupils who were not real. Undergraduates who were encouraged to believe that intelligence can be improved had higher exam scores and reported greater enjoyment of and engagement in university when contacted at the end of the term. Thus, believing that intelligence can be improved might 'inoculate' pupils against stereotype threat.

Girls and Boys: Differences in the Classroom

Sexual identity

The word gender usually refers to traits and behaviours that a particular culture judges to be appropriate for men and for women. In contrast, sex refers to biological differences. Sexual identity includes gender identity, gender-role behaviours and sexual orientation:

- Gender identity: a person's self-identification as male or female
- Gender-role behaviours: behaviours and characteristics that the culture associates with each gender
- Sexual orientation: the person's choice of a sexual partner

Sexual orientation

There are quite a few models describing the development of sexual orientation. Most focus on how adolescents develop an identity as gay, lesbian or bisexual. Generally, the models include the following or similar stages:

- Feeling different: age six, less interested in the activities of other children who are the same sex
- Feeling confused: in adolescence, feeling attractions for the same sex, lack role models and do stuff they think are normal for heterosexuals
- Acceptance: young adults, sort through sexual orientation issues, identify themselves as gay, lesbian or bisexual (may or may not make it public)

Gender-role identity

This is the image each individual has of themselves as masculine or feminine in characteristics – a part of self-concept. As early as age two, children are aware of gender differences. By age four, children have a beginning sense of gender roles. The sense of gender roles is well established by the age of six.

Through their interactions with family, peers, teachers and the environment in general, children begin to form gender schemas, or organized networks of knowledge about what it means to be male or female. Gender schemas help children make sense of the world and guide their behavior.

Gender-role stereotyping in the early years settings

By age four or five, children have developed a gender schema that describes what clothes, games, toys, behaviours and careers are 'right' for boys and girls – and these ideas can be quite rigid. Early years children tend to have more stereotyped notions of sex roles than older children, and all ages seem to have more rigid and traditional ideas about male occupations than about what females do.

Gender bias in the curriculum

Schools often foster gender biases (different views of males and females, often favouring one gender over the other) in a number of ways. Most of the textbooks produced for five- to eight-year-olds before 1970 portrayed both males and females in stereotyped roles.

A content analysis of television commercials found that white male characters were more prominent than any other group. So, before and after going to school, pupils are likely to encounter ‘texts’ that over-represent males.

Sex discrimination in classrooms

Teachers ask more questions of males, give males more feedback (praise, criticism and correction), and give more specific and valuable comments to boys. By the time pupils reach university, men are twice as likely to initiate comments as women.

In many subtle ways, pupils' stereotyped expectations for themselves are reinforced.

Sex differences in mental abilities

From infancy through the early years, most studies find few differences between boys and girls in overall mental and motor development or in specific abilities. During the school years and beyond, psychologists find no differences in general intelligence on the standard measures where tests have been designed and standardized to minimize sex differences. However, scores on some tests of specific abilities show sex differences.

In general, gender is the factor most directly associated with achievement regardless of ethnic background.

Boys’ under-achievement

There are clear signals in the relevant literature and case study research that by the age of 16 many boys are markedly under-achieving. The discussion of the research indicates that one factor affecting achievement is the way in which boys identify themselves as being ‘male’, which may influence their behaviour and attitudes towards school and towards their peers.

The male disadvantage continues into young adulthood.

One reason is that boys do not tend to enjoy school as much as girls. A second reason is that boys are more likely than girls to feel supported by their parents, academically as well as in other areas, and are less likely to have supportive relationships with adults outside the family as well.

For example, males on average are better on tests with rotation of a figure in space or navigating. Some researchers argue that evolution has favoured these skills in males, but others relate these skills to males’ more active play styles and to their participation in sports.

Eliminating gender bias

The blatant gender biases in favour of male pupils can convince girls that they just aren’t cut out for, for example, mathematics. There are, as yet, no totally convincing explanations of the phenomenon of gender bias, and therefore little hope of a universally effective strategy to deal with it.

Language Differences in the Classroom

Dialects

A dialect is any variety of a language spoken by a particular group. It is a regional variation of language characterised by distinct grammar, vocabulary and pronunciation.

A dialect continuum

Each dialect is logical, complex, rule-governed and can be placed somewhere along a continuum of difference from the formal root language. Dialect is different to accent by itself. Accent uses the same grammar and vocabulary but pronounces parts of the words, particularly the vowels, in a markedly different manner. Dialect is different to accent but the line of difference is very blurred.

Dialects and pronunciation

When endings are not pronounced, there are more homonyms (words that sound alike but have different meanings) in the pupil's speech than the unknowing teacher may expect (spent and spend). Usually, special attention is given to words such as these when they come up in spelling lessons. If teachers are aware of the special homonyms in pupil dialects, they can teach these differences directly.

Dialects and teaching

1. teachers should be sensitive to their own possible negative stereotypes about children who speak a different dialect
2. teachers can ensure comprehension by repeating instructions using different words and by asking pupils to paraphrase instructions or give examples

Code-switching: moving between two speech forms. Learning the alternative versions of a language is relatively easy for most children, as long as they have good models, clear instruction and opportunities for authentic practice.

Bilingualism

What does bilingualism mean?

Bilinguals are people who speak two languages is the limited definition: it minimises the significant problems that bilingual pupils face. There is more to it. Being bilingual and bicultural means mastering the knowledge necessary to communicate in two cultures as well as dealing with potential discrimination and as a teacher, you will have to help your pupils to learn all these skills.

Associated with bilingualism:

- English language learners (ELL): pupils whose primary of heritage language is not English
- English as a second language (ESL)
- English as an additional language (EAL)

Becoming bilingual

Proficiency in a second language has two separate aspects: face-to-face communication (takes 2-3 years) and academic uses of language (takes 5-7 years). Because they may be struggling with academic English, even though they are very knowledgeable, bilingual pupils may be overlooked for gifted and talented programmes.

Reaching every pupil: recognising giftedness in bilingual pupils

To identify a gifted bilingual pupil, you could use a case study or portfolio approach. You could also make use of informal assessments, samples of their work for example.

These points are a checklist for helping to identify gifted monolingual pupils:

- learn English quickly
- take risks in trying to communicate in English
- initiate conversations with native English speakers
- practice English skills by themselves
- do not frustrate easily
- etcetera

Bilingual education

The discussion about which way is best to teach bilingual pupils is still raging. Around the questions form two basic positions, which have given rise to two contrasting teaching approaches. The first focuses on making the transition to English as quickly as possible (they believe that English ought to be introduced as early as possible because otherwise valuable learning time is lost) and the second attempts to maintain or improve the native language, and use the native language as the primary teaching language until English skills are more fully developed. Proponents of this instruction raise four important issues:

1. children who are forced to learn something in an unfamiliar language are bound to have trouble (become semilingual, not proficient in either language)

2. pupils may get the message that their home languages are second class
3. the academic content that pupils are taught in their native language is learned – they do not forget the knowledge and skills when they are able to speak English
4. by the time pupils have mastered academic English and let their home language deteriorate, they reach secondary school and are encouraged to learn a second language

Research on bilingual programmes

Attention today is shifting from debate about general approaches to a focus on effective teaching strategies. As you will see many times in this book effective teaching strategies include:

- a combination of clarity of learning goals and direct instruction in needed skills – including learning strategies and tactics
- teacher- or peer-guided practice leading to independent practice
- authentic and engaging tasks (included ICT)
- opportunities for interaction and conversation that are story focused
- warm encouragement from the teacher

Creating Culturally Responsive Schools

This is a term to describe schools that provide culturally diverse pupils with equitable access to the teaching-learning process.

Culturally relevant pedagogy

This is using the cultural knowledge, prior experiences, frames of references and learning styles of ethnically diverse pupils to make learning encounters more relevant and effective for them. Teachers should incorporate elements of students' culture in instruction.

The term culturally relevant pedagogy is used to describe teaching that rests on three propositions. Pupils must:

1. Experience academic success.
2. Develop/maintain their cultural competence.
3. Develop a critical consciousness to challenge the status quo.

Lisa Delpit describes three steps for teaching pupils of colour that are consistent with culturally relevant pedagogy:

1. Teachers must be convinced of the inherent intellectual capability, humanity and spiritual character of their pupils – they must believe the children.
2. Teachers must fight the foolishness that high test scores or scripted lessons are evidence of good learning and good teaching.
3. Teachers must learn who their pupils are and the legacies they bring.

Fostering resilience

Resilient pupils

Some pupils who seem able to thrive in spite of serious challenges are actively engaged in school. They have good interpersonal skills, confidence in their own ability to learn, positive attitudes towards school, pride in their ethnicity and high expectations.

Jackson and Martin (1998) noted that there were more similarities than differences between their 'high achievers' group and a group 'who had not reached the threshold for inclusion in the study'. There were, however, a small number of variables that seemed to contribute to educational success and psychological well-being, including:

- receiving stability and continuity in care
- learning to read early and fluently
- receiving encouragement from parent/foster carer or other significant adult to go into further education
- having friends outside care who did well at school

- possessing high levels of internal locus of control and intrinsic motivation
- meeting a significant adult who acted as a mentor and who offered consistent support and encouragement
- attending school regularly

Resilience classrooms

Beth Doll and her colleagues suggest that we are in the business of changing classrooms instead of changing pupils because 'alternative strategies will be more enduring and most successful when they are integrated into naturally occurring systems of support that surround children'. There are two strands of elements that bind pupils to their classroom community. One strand emphasises the self-esteem, self-agency or self-evaluation of pupils. The second strand emphasises caring and connected relationships in the classroom and the school.

Diversity in Learning

The dimensions of classrooms that reflect the diversity of the pupils still hold good for today because using them, provision can be tailored to better fit the background of pupils.

Social organisation

Social structure or social organisation in this context means the ways people interact to accomplish a particular goal.

Cultural values and learning preferences

Three characteristics of teachers who design culturally inclusive classrooms:

1. they recognise the various ways all their pupils display their capabilities
2. they respond to pupils' preferred ways of learning
3. they understand that a particular group's cultural practices, values and learning preferences may not apply to everyone in that group

Some of the characteristics of learning styles preferred by boys in general are:

- a visual/global approach rather than a verbal/analytic approach
- a preference for reasoning by inference rather than by formal logic
- a focus on people and relationships
- a preference for energetic involvement in several activities simultaneously rather than routine, step-by-step learning
- a tendency to approximate numbers, space and time
- a greater dependence on non-verbal communication

Cautions about learning styles research

1. validity of some of the learning styles research has been strongly questioned
2. there is a heated debate today about whether identifying ethnic group differences in learning styles and preferences is a dangerous, racist or sexist exercise

The best advice for teachers is to be sensitive to individual differences in all pupils and to make available alternative paths to learning.

Sociolinguistics

This is the study of language and linguistic behaviour as influenced by social and cultural factors. The classroom is a special setting for communicating; it has its own set of rules for when, how, to whom, about what subject, and in what manner to use language. In order to be successful, pupils must understand the pragmatics of the classroom. To be competent communicators in the classroom, pupils sometimes have to read very subtle, non-verbal cues telling them which participation structures are currently in effect.

Sources of misunderstandings

Pupils from different cultural backgrounds may have learned different participation structures. The source of misunderstanding can be a subtle sociolinguistic difference, such as how long the teacher waits to react to pupils' responses.

Especially in the early years, teachers should make communication rules for activities clear and explicit. Don not assume pupils know what to do. The most important thing is to be consistent in responding to pupils (don't call on those who break the rules).

The digital divide

The split in access to technology has been called the digital divide. Despite the prevalence of some communication technologies in my developed and developing nation states, being the wrong side of the digital divide can isolate children and their families from the means of fully participating in modern multicultural societies.

Teaching every pupil

Three general principles to deal with different cultures and languages of pupils:

1. Know the pupils

This includes taking time to talk to pupils, their parents and the school governors who represent parents and the community. Effective teachers know the community they serve: the shops and services; the social problems and celebrations; the special customs and events that shape the lives and experiences of the children.

2. Respect the pupils

From knowledge ought to come respect for pupils' learning strengths – for the struggles they face and the obstacles they have to overcome. Fostering mutual confidence and respect is the key to ensuring educational advantage for pupils and the establishment of a truly successful multicultural enterprise.

3. Teach the pupils

The most important thing that teachers can do for pupils is teach them to read, write, speak, compute, think and create – through consistent, rigorous and culturally connected teaching. Teaching for meaning:

- teaching that helps students perceive the relationship of 'parts' to wholes
- teaching that provides students with the 'tools' to construct meaning during school tasks and in their culture
- teaching that makes explicit connections between one subject area and the next and between what is learned in school and children's home lives

Chapter 6 – Behavioural Views of Learning

Understanding Learning

Learning is not limited to school.

Learning: a definition

In the broadest sense, learning occurs when experience causes a relatively permanent change in an individual's knowledge or behaviour. To qualify as learning, the change in knowledge or behaviour must be brought about by experience – by the interaction of a person with their environment. Changes simply caused by maturation or temporary changes resulting from illness for example, do not qualify as learning.

Cognitive psychologists focus on changes in knowledge: believe learning is an internal mental activity that cannot be observed directly.

Behaviourists, however, favour behavioural learning theories. This view assumes that the outcome of learning is change in behaviour, and it emphasises the effects of external events on the individual.

Early Explanations of Learning: Contiguity and Classical Conditioning

Aristotle said that we remember things together a) when they are similar, b) when they contrast, c) when they are contiguous (presented together). The principle of contiguity states that whenever two or more sensations occur together often enough, they will become associated. Later, one of these sensations (a stimulus) will activate remembrance of the other (a response).

Classical conditioning helps to explain the way in which we have learned these response and focuses on the learning of involuntary emotional or physiological responses such as fear, increased muscle tension, salivation or sweating. These sometimes are called respondents because they are automatic responses to stimuli.

Pavlov with the dog: the tuning fork was at first a neutral stimulus because it brought forth no salivation. The food was an unconditioned stimulus because no prior training or conditioning was needed to establish the natural connection between food and salivation. The salivation was an unconditioned response.

After conditioning the dog, the sound became a conditioned stimulus and the salivating after the tone a conditioned response.

Remember that emotions and attitudes as well as facts and ideas are learned in classrooms. This emotional learning can sometimes interfere with academic learning.

Operant Conditioning: Trying New Responses

The learning process involved in operant behaviour is called operant conditioning because we learn to behave in certain ways as we operate on the environment. Skinner came up with this, because he believes that the principles of classical conditioning account for only a small portion of learned behaviours.

A-B-C: antecedent-behaviour-consequence. According to the behavioural view, consequences determine to a great extent whether a person will repeat the behaviour that led to the consequences.

Reinforcement

A reinforcer is any consequence that strengthens the behaviour it follows. Skinner did not speculate about why reinforcers increase behaviour. He believed that it was useless to talk about imaginary constructs' such as meaning, expectations, needs or tensions. He simply described the tendency for a given operant to increase after certain consequences.

Positive reinforcement: occurs when the behaviour produces a new stimulus. Negative reinforcement: when the consequence that strengthens a behaviour is the disappearance of a stimulus.

Punishment

Punishment involves decreasing or suppressing behaviour. Presentation (positive) punishment: occurs when the appearance of a stimulus following the behaviour suppresses or decreases the behaviour. Removal (negative) punishment involves removing a stimulus.

Reinforcement schedules

Continuous reinforcement schedule: when people are learning a new behaviour and are being reinforced for every correct response. Intermittent reinforcement schedule: maintaining behaviour by being reinforced intermittently rather than every time. Two kinds of intermittent reinforcement: interval schedule (based on the amount of time between reinforcer) and ratio schedule (based on the number of responses learners give between reinforcers. They both may be either fixed (predictable) or variable (unpredictable).

- speed of performance depends on control (10 correct means break or work for 20 minutes means break)
- persistence in performance depends on unpredictability (praise loses value)
- persistence of response depends on variable schedules (gambles playing slot machines)

Extinction

In operant conditioning, a person or an animal will not persist in a certain behaviour if the usual reinforcer is withheld long enough. Removal of reinforcement altogether leads to extinction.

Antecedents and behaviour change

Stimulus control: capacity for the presence or absence of antecedents to cause behaviours (the red light for the pigeon). We often respond to such antecedents (as head master in corridor) without fully realising that they are influencing our behaviour. Teachers, however, can use cues deliberately in the classroom to encourage the desired behaviour.

Cueing

This is the act of providing an antecedent stimulus just before a particular behaviour is supposed to take place. When a learner performs the appropriate behaviour after a cue (getting your books) the teacher can reinforce the accomplishment instead of punishing the failure.

Prompting

A prompt is an additional cue, a reminder to make sure the person reacts to the cue.

Applied Behaviour Analysis

This is the application of behavioural learning principles to change behaviour. It ideally requires clear specification of the behaviour to be changed, careful measurement of the behaviour, analysis of the antecedents and reinforcers that might be maintaining inappropriate behaviour, interventions based on behavioural principles to change the behaviour, and careful measurement of changes. In research on this, they use an ABAB design (chapter 1).

Methods for encouraging behaviours

Reinforcing with teacher attention

Differential reinforcement: ignoring inappropriate behaviours while being sure to reinforce appropriate behaviours as soon as they occur. Problem: peer attention can account for the positive reinforcement which teacher tries to not give. To be effective, praise must a) be contingent on the behaviour to be reinforced, b) specify clearly the behaviour being reinforced and c) be believable.

Some psychologists have suggested that teachers' use of praise tends to focus learners on learning to win approval rather than on learning for its own sake.

Selecting reinforcers: the Premack principle

According to the Premack principle, a high-frequency behaviour (a preferred activity) can be an effective reinforcer for a low-frequency behaviour (a less-preferred activity) (Grandma's rule). For the Premack principle to be effective, the low-frequency behaviour must happen first.

Shaping

Shaping, also called successive approximations, involves reinforcing progress instead of waiting for perfection. In order to use shaping, the teacher must take the final complex behaviour the learner is expected to master and break it down into a number of small steps. A task analysis gives a picture of the logical sequence of steps leading towards the final goal. Because shaping is a time-consuming process, however, it should not be used if success can be attained through simpler methods such as cueing.

Positive practice

In positive practice, learners replace one behaviour with another. It can be applied when learners break classroom rules. Instead of being punished, the learner might be required to practise the correct alternative action.

Coping with undesirable behaviour

Negative reinforcement

To enhance learning, you place learners in mildly unpleasant situations so they can 'escape' when their behaviour improves. The focus is on strengthening specific behaviours (putting away pencils in order to have a break). Negative reinforcement gives learners a chance to exercise control. In contrast, punishment occurs after the fact, and a learner cannot so easily control or terminate it.

Satiation

Another way to stop problem behaviour is to insist that learners continue the behaviour until they are tired of doing it. Forcing learners to continue some behaviours may be physically or emotionally harmful, or even dangerous so it should be applied with care.

Reprimands

Soft, calm, private reprimands are more effective than loud, public reprimands in decreasing disruptive behaviour. If they are not used too often, and if the classroom is generally a positive, warm environment, then learners usually respond quickly to private reprimands.

Response cost

For certain infractions of the rules, people must lose some reinforcer – money, time, privileges. In a class, the concept of response cost can be applied in a number of ways. Warning, then marks.

Social isolation

This process involves removing a highly disruptive learner from the classroom for five to 10 minutes. A trip to the head teacher's office or confinement to a chair in the corner of the regular classroom does not have the same effect as sitting alone in an empty room.

Some cautions

Whenever teachers consider the use of punishment, it should be part of a two-pronged attack. First goal: carry out punishment and suppress undesirable behaviour. Second goal: make clear what the learner should be doing instead and provide reinforcement for desirable actions.

Reaching every learner: functional behavioural assessment and positive behaviour support

Learners behave undesirable to:

1. Receive attention from others – teachers, parents or peers
2. Escape from some unpleasant situation – an academic or social demand

3. Obtain a desired item or activity
4. Meet sensory needs, such as stimulation from rocking or flapping arms for some children with autism

If the reason for the behaviour is known, then the teacher can devise ways of supporting positive behaviours that will serve the same 'why' function.

Positive behavioural supports

These are interventions designed to replace problem behaviours with new actions that serve the same purpose for the learner. The process of understanding the problem behaviour is known as a functional behavioural assessment (FBA) – 'a collection of methods or procedures used to obtain information about antecedents, behaviours, and consequences to determine the reason or function of the behaviour'.

Doing functional behavioural assessments

Even though learners are not always sure why they misbehaved, they seem to benefit from talking to a concerned adult who was trying to understand their situation, not just reprimand them.

Behavioural Approaches to Teaching and Management

Group consequences

Caution is needed using group approaches. The whole group should not suffer for the misbehaviour or mistakes of one individual if the group has no real influence over that person. Peer pressure in the form of support and encouragement, however, can be a positive influence. Group consequences are recommended for situations in which learners care about the approval of their peers.

Token reinforcement programmes

Token reinforcement systems are complicated and time-consuming. They should be used in only three situations:

1. to motivate learners who are completely uninterested in their work and have not responded to other approaches
2. to encourage learners who have consistently failed to make academic progress
3. to deal with a class that is out of control

Before trying a token system, teachers should be sure that teaching methods and materials are right for the learners.

Contingency contract programmes

In this kind of programme, the teacher draws up an individual contract with each learner, describing exactly what the person must do to earn a particular privilege or reward. The positive aspects of this programme is that this chart serves as a contract, assignment sheet and progress record which allows tracking of a learner.

Learners with severe behaviour problems

Lea Theodore (2001): rules, checklist on the desk of the teacher. End of class: pick from jar and maybe a surprise.
Kara McGoey & George DuPaul (2000): Both token system and response cost system (with buttons). Both effective, but response cost system was easier to implement.

Observational Learning and Cognitive Behaviour Modification: Thinking about Behaviour

Observational learning

Social learning theory (Albert Bandura): theory that emphasised learning through observation of others. Bandura suggested that we all may know more than we show in our behaviour (example with the Bobo doll). Bandura focused recently on cognitive factors such as beliefs, self-perceptions and expectations, so this theory is now called a social cognitive theory. This theory distinguishes between enactive and vicarious learning. Enactive learning is learning by doing and experiencing the consequences of your actions. Vicarious learning is learning by observing others.

Elements of observational learning

Through observational learning, we learn not only how to perform a behaviour but also what will happen to us in specific situations if we do perform it. Bandura notes that observational learning includes four elements: paying attention, retaining information or impressions, producing behaviours and being motivated to repeat the behaviours.

Attention

In order to learn through observation, we have to pay attention; otherwise we are simply not observing. Seeing something from the same perspective as your own directs your attention to the right features of the situation and makes observational learning easier (for example a dance move).

Retention

In order to imitate the behaviour of a model, you have to remember it. Retention can be improved by mental rehearsal or actual practice.

Production

Sometimes, we need a great deal of practice, feedback and coaching about subtle points before we can reproduce the behaviour of the model.

Motivation and reinforcement

Bandura identifies three forms of reinforcement that can encourage observational learning. Direct reinforcement: “Excellent!”. Vicarious reinforcement: others get compliments, so you want that too. Self-reinforcement: controlling your own reinforces.

Factors that influence observational learning

- developmental level: the older, the more they can focus, use memory strategies and motivate themselves
- status of the model: more likely to imitate someone who is competent, powerful
- models who are seen as similar are more readily imitated
- observers are more likely to learn from models if the observers have a high level of self-efficacy (believe they are capable of doing the actions needed to reach the goals, or at least of learning how to do so)

Observational learning in teaching

Directing attention

By observing others, we not only learn about actions but also notice the objects involved in the actions (a toy someone plays with; you want it too).

Fine-tuning already-learned behaviours

Observing the behaviour of others tells us which of our already-learned behaviours to use (when to start eating at a formal dinner).

Strengthening

Ripple effect: ‘contagious’ spreading of behaviours through imitation. Teachers dealing with a rule breaker, especially a class leader. Once a teacher has called for a particular action, following through is an important part of capitalising on the ripple effect.

Teaching new behaviours

Studies indicate that modelling can be most effective when the teacher makes use of all the elements of observational learning described in the previous section, especially reinforcement and practice.

Arousing emotion

Finally, through observational learning, people may develop emotional reactions to situations they have never experienced personally, such as flying or driving. Note that hearing and reading about a situation are also forms of observation.

Self-management

People must learn to manage their own lives, set their own goals and provide their own reinforcement.

Goal setting

Learners who set goals and discuss them appear to perform better. The problem is that learners may set goals that are too low. Teachers must help learners to not do that.

Monitoring and evaluating progress

Self-evaluation is somewhat more difficult than simple self-recording because it involves making a judgement about quality.

Self-reinforcement

This is the last step in self-management. Some believe that rewarding yourself for a job well done can lead to higher levels of performance than simply setting goals and keeping track of progress.

Cognitive behaviour modification and self-instruction

Cognitive behaviour modification adds an emphasis on thinking and self-talk to self-management. In cognitive behaviour modification, learners are taught directly how to use self-instruction (Meichenbaum):

1. An adult model performs a task while talking to themselves out loud (cognitive modelling)
2. The child performs the same task under the direction of the model's instructions (overt, external guidance)
3. The child performs the task while instructing themselves aloud (overt, self-guidance)
4. The child whispers the instructions to themselves as they go through the task (faded, overt self-guidance)
5. The child performs the task while guiding their performance via private speech (covert self-instruction)

Problems and Issues

Criticisms of behavioural methods

Limitations

The indiscriminate use of even the best tools can lead to difficulties. Just as you must take into account the effects of a reward system on the individual, you must also consider its impact on other members of the class. If the conduct of some learners does seem to deteriorate when their peers are involved in special programmes, many of the same procedures discussed in this chapter should help them return to previous levels of appropriate behaviour.

Ethical issues

Goals

Whenever possible, the emphasis should be placed on academic learning. Academic improvements generalise to other situations more successfully than do changes in classroom conduct.

Strategies

Punishment is unnecessary and even unethical when positive approaches, which have fewer potential dangers, might work as well.

Diversity and Convergence in Behavioural Learning



Different activities or objects will serve as reinforcers for some learners, but not others. Some learners will work for the promise of good grades – others could not care less. All class members will have learned from different models in their homes, neighbourhoods or communities.

Even though a classroom may be filled with many different learning histories, there are some principles that apply to all people:

1. No one eagerly repeats behaviours that have been punished or ignored. Without some sense of progress, it is difficult to persist.
2. When actions lead to consequences that are positive for the person involved, those actions are likely to be repeated.
3. Teachers often fail to use reinforcement to recognise appropriate behaviour; they respond instead to inappropriate behaviours, sometimes providing reinforcing attention in the process.
4. To be effective, praise must be a sincere recognition of a real accomplishment.
5. Whatever their current level of functioning, people can learn to be more self-managing.

Chapter 7 – Cognitive Views of Learning

Elements of the Cognitive Perspective

Today, there is renewed interest in learning, thinking and problem solving. The cognitive view of learning can be described as a generally agreed-upon philosophical orientation. This means that cognitive theorists share basic notions about learning and memory.

Comparing cognitive and behavioural views

These views differ in their assumptions about what is learned.

- Behavioural view: new behaviours are learned. Cognitive view: knowledge is learned, which makes changes in behaviour possible.
- BV: reinforcement strengthens responses. CV: reinforcement is a source of information that provides feedback about what is likely to happen if behaviours are repeated or changed.
- BV: much work with animals in controlled laboratory. CV: study a wide range of learning situations.
- BV: goal is to identify general laws of learning. CV: not concerned with general laws of learning.

The importance of knowledge in learning

Cognitive approach suggests that one of the most important elements in the learning process is what the individual brings to new learning situations. Knowledge determines to a great extent what we will pay attention to, perceive, learn, remember and forget.

An example study

Masoura and Gathercole: children from Greece, learning English words. It seems then that previous knowledge of the language was the key factor regardless of how good a short-term memory the children had.

General and specific knowledge

Domain-specific knowledge: relates to a particular task or subject. General knowledge applies to many different situations.

The Information Processing Model of Memory

Information processing: the human mind takes in information, performs operations on it to change its form and content, stores the information, retrieves it when needed and generates responses to it.

Sensory memory

Sensory memory is the initial processing that transforms incoming stimuli such as seeing, hearing, tasting, smelling and feeling into information so we can make sense of them.

Capacity, duration and contents of sensory memory

Capacity is very large, can take in more information than we can possibly handle at once.

Duration lasts between one and three seconds.

The content resembles the sensations from the original stimulus. Failure to process the information will mean that it is lost so perception and attention are critical at this stage to make sure that important aspects are registered.

Perception

This is the process of detecting a stimulus and assigning meaning to it. Gestalt, which means 'pattern' or 'configuration' in German, refers to people's tendency to organise sensory information into figures and whole forms.

Another explanation in information processing: feature analysis, bottom-up processing. The stimulus must be analysed into features or components and assembled into a meaningful pattern 'from the bottom up'.

We are also capable of top-down processing. To recognise patterns rapidly, in addition to noting features, we use what we already know about the situation.

The role of attention

By paying attention to selected stimuli and ignoring others, we limit the possibilities that we will perceive and process. What we pay attention to is guided to a certain extent by what we already know, what we need to know and what we would like to know (so all tree memory processes).

Automaticity is a matter of degree; we are not completely automatic, but rather more or less automatic in our performances depending on how much practice we have had in the situation.

Attention and teaching

If people are to learn they have to maintain attention – they have to stay focused on the important features of the learning situation.

Working memory

Working memory is the 'workbench' of the memory system, the interface where new information is held temporarily and combined with knowledge from long-term memory. Short-term memory is not exactly the same as working memory. Working memory includes both temporary storage and active processing where active mental effort is applied to both new and old information. But short-term memory usually means just storage, the immediate memory for new information that can be held about 15 to 20 seconds.

Working memory is composed of three elements:

- the central executive: controls attention and other mental resources
- the phonological loop: holds verbal and acoustical (sound) information
- visuospatial sketchpad: holds an image temporarily for visual and spatial information

The central executive

It supervises attention, makes plans, retrieves and integrates information.

The phonological loop

Rehearsing words and sounds for short-term memory (according to Baddeley as much as we can rehearse in 1.5 to 2 seconds).

The visuospatial sketchpad

Where you manipulate the image (for rotating a p 180 degrees). You can use your phonological loop and your visuospatial sketchpad at the same time, but each is quickly filled and easily overburdened.

Duration and contents of working memory

The duration is 20 seconds, unless you keep rehearsing the information in your head. The contents may be in the form of sounds and images (like the sensory memory), or the information may be structured more abstractly, based on meaning.

Retaining information in working memory

When activation fades, forgetting follows. You must keep rehearsing. Maintenance rehearsal: repeating the information in your mind. Elaborative rehearsal: connecting the information you are trying to remember with something you already know, with knowledge from long-term memory.

The limited capacity of working memory can also be somewhat circumvented by the process of chunking: the number of bits is a limitation, not the size of each bit.

Forgetting

Interference: processing new information interferes or gets confused with old information. Decay: if you don't continue to pay attention to information, the activation level decays and finally drops so low that the information cannot be reactivated – it disappears altogether.

Long-Term Memory: The Goal of Teaching

Long-term memory hold the information that is well learned, such as all the telephone numbers you know.

Capacity, duration and contents of long-term memory

To move information into long-term storage requires more time and a bit of effort as we shall see. The capacity seems to be unlimited. Once information is stored in long-term memory, it can remain there permanently. Acces to it requires time and effort.

Wilson: working memory is part of long-term memory (it is more about processing than storage). Kintsch: long-term working memory, holds the retrieval structures and strategies that pull from long-term memory the information needed at the moment.

Contents of long-term memory: declarative, procedural and conditional knowledge

Declarative knowledge is knowledge that can be declared or stated through words and symbol systems of all kinds including spoken and written language, Braille, etc ('knowing that'). Can be specific facts, personal preferences or rules.

Procedural knowledge is 'knowing how' to do something (divide fractions) – it is knowledge in action.

Conditional knowledge is 'knowing when and why' to apply your declarative and procedural knowledge.

Contents of long-term memory: words and images

Allan Paivio: information is stored in long-term memory as either visual images, verbal units or both. Two categories of long-term memory: explicit memory is knowledge that can be recalled and consciously considered (you know that you know your date of birth). Implicit memory is knowledge that we are not conscious of recalling, but that influences behaviour or thought without our awareness (claustrophobia).

Explicit memories: semantic and episodic

Semantic memory is memory for meaning, including words, facts, theories and concepts – declarative knowledge. Stored as propositions, images and schemas.

Propositions and propositional networks

A proposition is the smallest unit of knowledge that can be judged true or false. "Alice borrowed the crystal wine gasses" has two propositions. These are linked in propositional networks.

Images

Images are representations based on the structure or appearance of the information. It takes longer to count your windows when you have more windows: it isn't in a proposition.

Schemas

Often our knowledge about a topic combines images and propositions. Schemas are abstract knowledge structures that organise vast amounts of information. A schema is a pattern or guide for representing an event, concept or skill. Schemas are personal. They have the advantage that they can be applied in many contexts, but they have the disadvantage that you can be wrong.

Episodic memory

Information tied to a particular place and time: episodic memory is about events we have experienced, so we often can explain when the event happened. Episodic memory also keeps track of the order of things, so it is a good place to store jokes, gossip or plots from films.

Flashbulb memories: memories for dramatic or emotional moments in your life.

Implicit memories

Three types of implicit memories:

- classical conditioning (feeling sick for an exam)
- procedural memory (how to ride a bicycle). The more practiced the procedure, the more automatic the action and the more implicit the memory.
- Priming: activating information that already is in long-term memory

Storing and retrieving information in long-term memory

It seems that one important requirement for learning is that you integrate new information with knowledge already stored in long-term memory as you construct an understanding. Here elaboration, organisation and context play a role.

Elaboration is adding meaning to new information by connecting the information with already existing knowledge.

Organisation. Material that is well organised is easier to learn and to remember than bits and pieces of information, especially if the information is complex or extensive. The structure serves as a guide back to the information.

Context. Aspects of physical and emotional context – places, rooms, moods – are learned along with other information. You perform better on the test if the room is the same you studied in.

Levels of processing theories

Levels of processing is particularly related to the notion of elaboration described above. Craik and Lockhart suggested that what determine how long information is remembered is how extensively the information is analysed and connected with other information (example dogs coats and danger).

Retrieving information from long-term memory

Sometimes the search for information in the long-term memory is conscious, searching a friend's name, sometimes it is automatic, solving a maths problem.

Spreading activation

When a particular proposition or image is active – when we are thinking about it – other closely associated knowledge can be primed or triggered as well, and activation can spread through the network.

Reconstruction

In long-term memory, the information is still available, even when it is not activated, even when you are not thinking about it at the moment. Reconstruction is a cognitive tool or problem-solving process that makes use of logic, cues and other knowledge to construct a reasonable answer by filling in any missing parts.

Forgetting and long-term memory

One explanation for the decline is that neural connections, like muscles, grow weak without use.

It appears that teaching strategies that encourage learner engagement and lead to higher levels of initial learning are associated with longer retention.

Metacognition

Metacognitive knowledge and regulation

Metacognition, according to Donald Meichenbaum is people's awareness of their own cognitive machinery and how the machinery works. This is higher-order cognition used to monitor and regulate cognitive processes such as

reasoning, comprehension, problem solving, learning and so on. Metacognition includes again declarative knowledge (about yourself as learner), procedural knowledge (how to use the strategies) and conditional knowledge (when and why to apply the strategies).

Three essential skills to regulate thinking and learning:

- planning (deciding how much time to give to a task)
- monitoring: real-time awareness “How I’m doing”.
- evaluating: making judgements about the processes and outcomes of thinking and learning

Metacognitive strategies for learners with learning difficulties

For learners with learning difficulties, executive control processes (metacognitive strategies) are especially important, but often underdeveloped. Michal Pressley developed the Cognitive Strategies Model as a guide for teaching learners to improve their metacognitive strategies.

Becoming Knowledgeable: Some Basis Principles

We will discuss the development of declarative and procedural knowledge separately, but keep in mind that real learning is a combination and integration of these elements.

Development of declarative knowledge

Learners don’t always have a good base of knowledge. In the early phases of learning, learners of any age must grope around the landscape a bit, searching for landmarks and direction. Perhaps the best single method for helping learners learn is to make each lesson as meaningful as possible.

Making it meaningful

Meaningful lessons...

- are presented in vocabulary that makes sense to the earners
- new terms are clarified
- well organised
- include clear connections between the different elements of the lesson
- make natural use of old information to help learners understand new information through examples/analogies

Visual images and illustrations

Mayer’s cognitive theory of multimedia learning includes three ideas:

1. Dual coding: visual and verbal materials are processed in different systems
2. Limited capacity: working memory for verbal and visual material is severely limited
3. Generative learning: meaningful learning happens when learners focus on relevant information and generate or build connections

Give learners multiple ways to understand – pictures and explanations. But don’t overload working memory – ‘package’ the visual and verbal information together in bite-size (or memory-size) pieces.

Mnemonics

These are systematic procedures for improving memory.

- loci method: imagine a familiar place, the locations serve as ‘pegs’ to ‘hang’ memories
- other peg-type mnemonics: use a standard list of words
- acronym: a word formed from the first letter of each word in a phrase
- chain mnemonics: methods that connect the first item to be memorised with the second
- keyword method: recode to-be-learned vocabulary as a concrete keyword, relate this to the vocabulary item’s definition and retrieve the desired definition

Rote memorisation

- serial position effect: latest items are likely to be still in your working memory (recency effect), first have been rehearsed and transferred to your long-term memory (primacy effect)
- part learning: breaking the list into smaller segments can help prevent this effect, because it means there will be fewer middle items left
- distributed practice: intermittently studying
- massed practice: studying for an extended period

Becoming an expert: development of procedural and conditional knowledge

Experts in a particular field have a wealth of domain-specific knowledge, that is, knowledge that applies specifically to their area or domain. In addition, it appears that experts have developed their long-term working memories in the domain and can quickly access relevant knowledge and strategies for solving problems in that domain. Expert's declarative knowledge has become 'proceduralised', incorporated into routines that can apply automatically without making many demands on working memory. Explicit memories have become implicit.

Automated basic skills

The development of an automated skill occurs in three stages:

- cognitive stage: we rely on declarative knowledge and general problem-solving strategies
- associative stage: individual steps of a procedure are combined or 'chunked' into larger units
- autonomous stage: the whole procedure can be accomplished without much attention

Domain-specific strategies

These are consciously applied skills that organise thoughts and actions to reach a goal. To support this kind of learning, teachers need to provide opportunities for practice in many different situations.

Chapter 8 – Complex Cognitive Processes

Learning and Teaching about Concepts

A concept is a category used to group similar events, ideas, objects or people. Concepts are abstractions: they do not exist in the real world.

Views of concept learning

The defining attributes theory of concepts suggests that we recognise specific examples by noting key required features.

Prototypes and exemplars

A prototype is the best representative of its category. Other members of the category may be very similar to the prototype or similar in some ways but different in others. Exemplars are our actual memories of specific birds, parties, furniture, and so on that we use to compare with an item in question to see if that item belongs in the same category as our exemplar.

Concepts and schemas

Our schematic knowledge related to the concept is also involved when we recognise an object.

Feldman: the simplicity principle. When humans are confronted with examples, they induce the simplest category or rule that would cover all the examples.

Strategies for teaching concepts

Like the learning of concepts, the teaching of concepts can combine both defining attributes and prototypes. One approach to teaching about concepts is called concept attainment – a way of helping pupils construct an understanding of specific concepts and practise thinking skills such as hypothesis testing.

Lesson components

Whatever strategy you use for teaching concepts, you will need four components in any lesson: examples and non-examples, relevant and irrelevant attributes, the name of the concept and a definition.

Examples

They are necessary to make the boundaries of the category clear.

Relevant and irrelevant attributes

In practice, some attributes are not helpful in defining a concept. For example, the attribute of having a head, though essential for a complete bird, does not contribute anything to defining the ‘bird-ness’ of a bird.

A good definition has a reference to any more general category for the new concept, and a statement of the new concept’s defining attributes.

Lesson structure

Undergeneralisation: exclusion of some true members from a category; limiting a concept. Overgeneralisation: inclusion of non-members in a category; overextending a concept.

The lesson beginning with the tomato and the rock was a good lesson.

Extending and connecting concepts

Concept mapping: pupils ‘diagram’ their understanding of a new or unfamiliar concept, by showing links to their current schema.

Teaching concepts through discovery

Structure and discovery

According to Bruner, it follows that learning will be more meaningful, useful and memorable for pupils if they focus on understanding the structure of the subject being studied. It refers to the essential information.

Pupils must be active: they must identify key principles for themselves rather than simply accepting teachers' explanations. This is discovery learning.

Discovery in action

Intuitive thinking is important, according to Bruner. Unfortunately, it could be argued that educational practices often discourage intuitive thinking by punishing wrong guesses and rewarding safe, but uncreative answers. Furthermore, children learn to associate wrong guesses with failure rather than an essential part of learning.

The learning zone

Learning can only take place where there is temporary misunderstanding or a new piece of knowledge is being experienced.

Unguided or pure discovery may be appropriate for early years pupils, but in a typical primary or secondary classroom, unguided activities usually prove unmanageable and unproductive. For these situations, guided discovery is preferable.

Teaching concepts through exposition

David Ausubel, in contrast to Bruner, believed that people acquire knowledge primarily through reception, not discovery. They use deductive reasoning: from general ideas to specific cases, not discovered from specific cases leading to general concepts.

Advance organisers

This is an introductory statement broad enough to encompass all the information that will follow:

- it directs your attention to what is important in the coming material
- it highlights relationships among ideas that will be presented
- it reminds you of relevant information you already have

Comparative organisers: activate or reactivate already existing schemas. Expository organisers: provide new knowledge that pupils will need to understand the upcoming information.

Advance organisers do help pupils learn if two conditions are met:

1. to be effective, the organiser must be understood by the pupils
2. the organiser must really be an organiser: it must indicate relations among the basic concepts and terms that will be used

Steps in an exposition

After the advance organiser, the next step is to present content in terms of similarities and differences using specific examples, perhaps provided by the pupils themselves. Finally, when all the material has been presented, the pupils are asked to discuss how the examples can be used to expand on the original advance organiser.

Reaching every pupil: learning disabilities and concept teaching

Analogical instruction: this approach has proved helpful for teaching scientific or cultural knowledge in heterogeneous secondary classes that include pupils who are less academically prepared and pupils with learning

disabilities. The goal is to identify knowledge that these pupils already have in memory that can be used as a starting point for learning the new, complex material.

Problem solving

A problem has an initial state (the current situation), a goal (the desired outcome) and a path for reaching the goal (including operations or activities that move you towards the goal). Problem solving is usually defined as formulating new answers, going beyond the simple application of previously learned rules to achieve a goal.

The five steps of general problem-solving strategies:

- I Identify problems and opportunities
- D Define goals and represent the problem
- E Explore possible strategies
- A Anticipate outcomes and Act
- L Look back and Learn

Identifying: problem finding

Identifying the problem is a critical first step. Research indicates that people often hurry through this important step and ‘leap’ to naming the first problem that comes to mind (‘the lifts are too slow!’).

Defining goals and representing the problem

To represent the problem and set a goal, you have to focus attention on relevant information, understand the words of the problem, and activate the right schema to understand to whole problem.

Focusing attention

Representing the problem often requires finding the relevant information and ignoring the irrelevant details.

Understanding the words

The second task is representing a story problem is understanding the meaning of the words and sentences (example: altogether interpreted as each).

Understanding the whole problem

Pupils need to form a conceptual model of the problem – they have to understand what the problem is really asking. You can better structure the problem than translating this as a distance problem and set a goal.

Translation and schema training

It is the meaning or structure, not the surface similarities that help in solving new, analogous problems. One way to overcome this tendency to focus on surface features is to have pupils compare examples or cases so they can develop a general problem-solving schema captures the common structure, not the surface features of the cases.

The results of problem representation

Schema-driven problem solving: you don’t really solve a new problem: you have simply recognised the new problem as a ‘disguised’ version of an old problem that you already know how to solve.

Exploring possible solution strategies

In conducting your search for a solution, you have available two general kinds of procedures: algorithmic and heuristic.

Algorithms



This is a step-by-step prescription for achieving a goal. It usually is domain-specific. Unfortunately, pupils often apply algorithms unsystematically. Even when applied appropriately and correctly many problems cannot be solved by algorithms, because there is no obvious step-by-step procedure for achieving the goal.

Heuristics

This is a general strategy that might lead to the right answer. Means-ends analysis: the problem is divided into a number of intermediate goals or sub-goals, and then a means of solving each intermediate sub-goal is figured out. Working-backward strategy: you begin at the goal and move back to the unsolved initial problem. Analogical thinking: limits your search for solutions to situations that have something in common with the one you currently face.

Anticipating acting, and looking back

After you choose a solution strategy and implement it, evaluate the results by checking for evidence that confirms or contradicts your solution.

Factors that hinder problem solving

Fixation

Functional fixedness: seeing object only in the context they are always used in. Response set: getting stuck on one way of representing a problem.

Some problems with heuristics

Representativeness heuristics: to make judgements about possibilities based on prototypes – what we think is representative of a category. Availability heuristic: judgements based on the availability of information in our memories. The tendency to hold on to our beliefs, even in the face of contradictory evidence, belief perseverance, may make us resist change. Confirmation bias: the tendency to search for information that confirms our ideas and beliefs.

The importance of flexibility

Functional fixedness, response set, the confirmation bias and belief perseverance point to the importance of flexibility. If you open your mind to multiple possibilities, you may have an insight: the sudden reorganisation or reconceptualisation of a problem that clarifies the problem and suggests a feasible solution.

Effective problem solving: what do the experts do?

Expert knowledge

In addition to representing a problem very quickly, experts know what to do next. They have a large store of productions or condition-action schemas about what action to take in various situations. The steps of understanding the problem and choosing a solution happen simultaneously and fairly automatically.

According to Michelene Chi, experts:

- perceive large, meaningful patterns in given information
- perform tasks quickly and with few errors
- deal with problems at a deeper level
- hold more information in working and long-term memories
- take a great deal of time to analyse a given problem
- are better at monitoring their performance

Creativity and Creative Problem Solving

Defining creativity

Four myths about creativity:



1. People are born creative. Creativity can be developed, enhanced and supported by the individual's or group's environment.
2. Creativity is intertwined with negative qualities. Danger with this myth is that teachers may expect creative pupils to be troublemakers and treat these pupils in a biased way.
3. Creativity is a fuzzy, soft construct. Creative people may be focused, organised and flexible.
4. Creativity is enhanced within a group. Group efforts tend to be more creative if individuals brainstorm on their own first.

Creativity is the ability to produce work that is original, but still appropriate and useful. A definition that combines many aspects of creativity highlights that creativity:

- often involves more than one person
- happens when people apply their abilities as part of a helpful process in a supportive environment
- results in an identifiable product that is new and useful in a particular culture or situation

What are the sources of creativity

According to Teresa Amabile, creative individuals or groups must have:

1. Domain-relevant skills
2. Creativity-relevant processes
3. Intrinsic task motivation

Creativity and cognition

Researchers think that when people are away of a certain problem allows for incubation, a kind of unconscious working through the problem. Motivation, persistence and social support play important roles in the creative process as well.

Assessing creativity

Paul Torrance (Father of Creativity) developed two types of creativity tests: verbal and graphic. Verbal test: think up as many uses as possible for a brick. Graphic test: create drawings, with each drawing including at least one circle. Divergent thinking: the ability to propose many different ideas or answers (originality, fluency and flexibility). Convergent thinking: the more common ability to identify only one answer.

There is some definitional diversity among educators when moving freely between talking about giftedness and talking about creativity and you should look out for muddled thinking in this context.

Creativity in the classroom

Brainstorming

The basic tenet of brainstorming is to separate the process of creating ideas from the process of evaluating them because evaluation often inhibits fluency and flexibility. Rules for brainstorming, according to John Baer:

1. defer judgement
2. avoid ownership of ideas
3. feel free to 'hitchhike' on other ideas
4. encourage wild ideas

The big C: revolutionary innovation

Winner says you should avoid the following dangers in encouraging potential creators:

1. pushing so hard that the child's intrinsic passion to master a field becomes a craving for extrinsic rewards
2. pushing so hard that the child later looks back on a missed childhood
3. freezing the child into a safe, technically perfect way of performing that has led to lavish rewards

4. be aware of the psychological wound that can follow when the child who can perform perfectly becomes the forgotten adult who can do nothing more than continue to perform perfectly – without ever creating something new

Developing Expert Pupils: Learning Strategies and Study Skills

Learning strategies and tactics

Learning strategies are ideas for accomplishing learning goals, a kind of overall plan of attack. Learning tactics are the specific techniques that make up the plan. Several important principles of using learning strategies:

1. Pupils must be exposed to number of different strategies
2. Pupils should be taught conditional knowledge about when, where and why to use various strategies
3. Pupils may know when and how to use a strategy, but unless they also develop the desire to employ these skills, general learning ability will not improve
4. Pupils should receive direct instruction in schematic knowledge

Deciding what is important

Teachers can give pupils practice using signals in texts such as headings, bold words, outlines or other indicators to identify key concepts and main ideas. Teaching pupils how to summarise material can be helpful, too.

Summaries

For each summary, ask pupils to:

- find or write a topic sentence for each paragraph or section
- identify big ideas that cover several specific points
- find some supporting information for each big idea
- delete any redundant information or unnecessary details

Engaging with knowledge – engaging with learning

Pupils' understanding of how they are learning

Early researchers and writers attempted to devise models to describe metacognitive problem solving; perhaps the best known is Flavell's in which there are three broad components:

1. Cognitive mindfulness: a learner's perception about their own cognitive resources and an evaluation of the learning task to be accomplished
2. Self-regulatory measures: a person's ability to actively regulate what they know during learning and when problem solving
3. Compensatory strategies: a person's use of fix-it strategies during the actual 'information-in' process

We believe that the way in which a key question is framed will have a powerful influence on the ways in which pupils use ICT to pursue a historical enquiry. Questions are usually one of three types:

1. Open questions "What can you find out about castles?"
2. Closed questions "Name the five largest castles in Wales"
3. Structured questions "Why do spiral stairs in castle towers often ascend in an anti-clockwise direction?"

Taking notes

Taking notes makes a difference, if used well:

- it focuses attention during class and helps encode information so it has a chance of making it to long-term memory
- notes provide extended external storage that allows you to return and review
- expert pupils match notes to their anticipated use and modify strategies after tests or assignments
- to help pupils organise their note taking, some teachers provide matrices or maps

Visual tools for organising

'Mapping' relationships by noting causal connections, comparative/contrasting connections and examples improved recall.

Reading strategies

No matter what strategies you use, pupils have to be taught how to use them. Direct teaching, explanation, modelling and practice with feedback are necessary.

Applying learning strategies

First condition to apply learning strategies is that the learning task must be appropriate.

Valuing learning

The second condition is that they must care about learning and understanding and that goals are set that can be reached using effective strategies.

Effort and efficacy

The third condition is that pupils must believe the effort and investment required to apply the strategies are reasonable, give the likely return. They also must have a base of knowledge and/or experience in the area. No learning strategies will help pupils accomplish tasks that are completely beyond their current understandings.

Epistemological beliefs

Finally, what pupils believe about knowledge and learning (their epistemological beliefs) will influence the kinds of strategies that they use. There are several dimensions of epistemological beliefs:

- Structure of knowledge: simple set of facts or complex structure?
- Stability/certainty of knowledge: fixed or evolving over time?
- Ability to learn: fixed or changeable?
- Speed of learning: quickly or does it take time?
- Nature of Learning: memorising facts or developing integrated understandings?

Teaching for Transfer?

Whenever something previously learned influences current learning or when solving an earlier problem affects how you solve a new problem, transfer has occurred. Functional fixedness and response set are examples of negative transfer.

The many views of transfer

Low-road transfer 'involves the spontaneous, automatic transfer of highly practised skills, with little need for reflective thinking'. Also referred to as direct-application transfer.

High-road transfer involves consciously applying abstract knowledge or strategies learned in one situation to a different situation. Can either be forward-reaching or backward-reaching. This is referred to as preparation for future learning.

Teaching for positive transfer

What is worth learning?

The learning of basic skills will definitely transfer to other situations, because these skills are necessary for later work both in and out of school. Teachers must also be aware of what the future is likely to hold for their pupils, both as a group and as individuals.

How can teachers help?

For basic skills, greater transfer can also be ensured by overlearning, practising a skill past the point of mastery.



Stages of transfer for strategies

Gary Phye describes three stages in developing strategic transfer. Acquisition phase: pupils receive instruction about a strategy, and also rehearse the strategy and practise being aware of when and how they are using it. Retention phase: more practice with feedback helps pupils hone their strategy use. Transfer phase: teacher should provide new problems that can be solved with the same strategy, even though the problems appear different on the surface.

Chapter 9 – Social Cognitive and Constructivist Views of Learning

Social Cognitive Theory

Reciprocal determinism

In social cognitive theory (Bandura), the following factors influence the process of learning:

- personal factors (attitudes, knowledge)
- physical and social environment (consequences of actions, physical settings)
- behaviour (choices, verbal statements)

These factors influence each other as well: reciprocal determinism. This process is dynamic and ongoing.

Self-efficacy

Albert Bandura suggests that predictions about possible outcomes of behaviour are critical for learning because they affect motivation. These predictions are affected by self-efficacy – our beliefs about our personal competence or effectiveness in a given area.

Self-efficacy, self-concept and self-esteem

Self-concept is a more global construct that contains many perceptions about the self, including self-efficacy. Self-efficacy is future-oriented. Self-concept has weaker predictive power.

Self-esteem is concerned with judgement of self-worth, whereas self-efficacy is concerned with judgements of personal capabilities.

Sources of self-efficacy

Bandura identified four sources of self-efficacy expectations:

- mastery experiences: our own direct experience, success raises efficacy and failure lowers efficacy
- physiological and emotional arousal: are you anxious and worried or excited and ‘psyched up’?
- vicarious experiences: someone else models accomplishments (how close do you identify)
- social persuasion: a ‘pep talk’ or specific performance feedback

Applying Social Cognitive Theory

Self-efficacy and motivation

A higher sense of self-efficacy supports motivation, even when the efficacy is an overestimation. Performance in school is improved and self-efficacy is increased when:

- a. learners adopt short-term goals so it is easier to judge progress
- b. learners are taught to use specific learning strategies such as outlining or summarising that help them focus attention
- c. learners receive rewards based on achievement, not just engagement, because achievement rewards signal increasing competence

Teachers’ sense of efficacy

This, a teacher’s belief that they can reach even difficult pupils to help them learn, appears to be one of the few personal characteristics of teachers that is correlated with learner achievement.

Self-regulated learning

This is, according to Barry Zimmerman, the process we use to activate and sustain our thoughts, behaviours and emotions in order to reach our goals. When the goals involve learning, we talk about self-regulated learning.

Self-regulated learners have a combination of academic learning skills and self-control that makes learning easier, so they are more motivated; in other words, they have the skill and the will to learn.

What influences self-regulation?

Three factors influence self-regulated learners: knowledge, motivation and self-discipline or volition. They need knowledge about themselves, the subject, the task, the strategies for learning and the contexts in which they will apply their learning. They need to be motivated to learn. Last but not least they need volition, willpower. Where motivation denotes commitment, volition denotes follow-through.

Models of self-regulated learning and agency

Agency is the capacity to coordinate learning skills, motivation and emotions to reach your goals. This model is based on a position that learners are agents. Steps:

1. Analysing the learning task.
2. Setting goals and devising plans.
3. Enacting tactics and strategies to accomplish the task.
4. Regulating learning.

Withing the classrooms

Mathematical problem solving

Both transfer and self-regulated learning strategies helped children learn mathematical problem solving and apply this knowledge to new problems. The addition of self-regulated learning strategies was especially effective when children were asked to solve problems that were very different from those they encountered in the lessons.

Writing strategies

Torrance and Fidalgo used Cognitive Self-Regulation Instruction (CSRI). They concluded that while there is some flexibility in how teaching is delivered, there is value in providing specific information about what learners are actually required to do in their written work and metacognitive strategies for monitoring and regulating what they write.

Teaching towards self-efficacy and self-regulated learning

Research indicates that learners develop academically effective forms of self-regulated learning (SRL) and a sense of efficacy for learning when teachers involve them in complex meaningful tasks that extend over long periods of time. Also, pupils need to have some control over their learning processes and work they produce – they need to make choices.

Complex tasks

Research indicates that the most motivating and academically beneficial tasks for learners are those that challenge, but don't overwhelm them. Rohrkemper and Corno advised teachers to design complex tasks that provide opportunities for learners to modify the learning conditions in order to cope with challenging problems.

Control

When learners have choices, they are more likely to anticipate a successful outcome and consequently increase effort and persist when difficulty arises. They also are invited to take responsibility.

Self-evaluation

Questions like these, posed to individuals or embedded in class discussions, prompt learners' metacognition, motivation and strategic action – the components of SRL.

Collaboration

Collaborative learning is concerned with constructing meaning through interactions with others and is an effective teaching and learning strategy for encouraging the sharing of ideas and discussion.

Cognitive and Social Constructivism

Constructivist theories of learning focus on how people make meaning, both on their own like Chelsea (example with the wall) and in interaction with others.

Constructivist views of learning

Most constructivists share two main ideas: that learners are active in constructing their own knowledge and that social interactions are important to knowledge construction.

Psychological constructivists focus on how individuals use information, resources and even help from others to build and improve their mental models and problem-solving strategies.

Social constructivists see learning as increasing our abilities to participate with others in activities that are meaningful in the culture.

Psychological/individual constructivism

Some psychologists believe that information processing is 'trivial' or 'weak' constructivism because the individual's only constructive contribution is to build accurate representations of the outside world.

Piaget's kind of constructivism is called first wave constructivism, with its emphasis on individual meaning making.

Radical constructivism hold that there is no reality or truth in the world, only the individual's perceptions and beliefs.

Vygotsky's social constructivism

Putting learning in social and cultural context is second wave constructivism. Because this theory relies heavily on social interactions and the cultural context to explain learning, most psychologists classify Vygotsky as a social constructivist. Others categorise him as psychological constructivist because he was primarily interested in development within the individual.

Constructionism or sociological constructivism

Sociological constructivists do not focus on individual learning. Their concern is how public knowledge in disciplines such as science, mathematics, economics or history is constructed. Beyond this kind of academic knowledge, constructionists also are interested in how commonsense ideas, everyday beliefs and commonly held understandings about people and the world are communicated to new members of a sociocultural group.

How is knowledge constructed?

Moshman describes three explanations:

1. The realities and truths of the external world direct knowledge construction.
2. Internal processes such as Piaget's organisation, assimilation and accommodation direct knowledge construction.
3. Both external and internal factors direct knowledge construction.

Knowledge: situated or general?

Situated learning emphasises that learning in the real world is not like studying in school. Knowledge is seen not as individual cognitive structures but as a creation of the community over time. The practices of the community constitute the knowledge of that community.

Common elements of constructivist perspectives

The agreement among constructivist theories is that knowing develops as learners try to make sense of their experiences. Learners test their understandings against experience and the understandings of other people – they negotiate and co-construct meanings.

Many constructivist approaches recommend the following conditions for learning:

1. Embed learning in complex, realistic and relevant learning environments
2. Provide for social negotiation and shared responsibility as a part of learning
3. Support multiple perspectives and use multiple representations of content
4. Nurture self-awareness and an understanding that knowledge is constructed
5. Encourage ownership in learning

Complex learning environments and authentic tasks

Learners should not be given stripped-down, simplified problems and basic skills exercises, but instead should encounter complex learning environments that deal with ‘fuzzy’, ill-structured problems. They are more represented in the outside world..

Social negotiation

From this perspective a major goal of teaching is to develop learner’s abilities to establish and defend their own positions while respecting the positions of others and working together to negotiate or co-construct meaning. Intersubjective attitude: a commitment to build shared meaning by finding common ground and exchanging interpretations.

Multiple perspectives and representations of content

It is better to provide multiple representations of content using different analogies, examples and metaphors. Jerome Bruner’s spiral curriculum: a structure for teaching that introduces the fundamental structure of all subjects – the ‘big ideas’ – early in the school years, then revisits the subjects in increasingly complex forms over time.

Understanding the knowledge construction process

If learners are aware of the influences that shape their thinking, they will be more able to choose, develop and defend positions in a self-critical way while respecting the positions of others.

Applying Constructivist Perspectives

Enquiry and problem-based learning

Enquiry learning: the teacher presents a puzzling event, question or problem. The learners:

- formulate hypotheses to explain the event or solve the problem
- collect data to test the hypotheses
- draw conclusions
- reflect on the original problem and the thinking processes needed to solve it

Examples of enquiry

1. Teacher presents discrepant (unexpected) event (paper rises after blowing)
2. Learners ask questions (temperature important?)
3. Learners test causal relationships (nature air on top causes paper to rise?)
4. Learners form a generalisation (air on top moves faster, less air pressure, object rises)
5. Teacher leads learners in a discussion of their thinking processes

First-hand investigations: direct experiences and experiments (measuring bat’s ears). Second-hand investigations: consult books, the internet, etc.

Problem-based learning

The goals of problem-based learning are to help learners develop flexible knowledge that can be applied in many situations in contrast to inert knowledge which invites passivity in learners and low-level learning.

Pupils are confronted with a problem that launches their enquiry as they collaborate to find solutions. They identify and analyse the problem and then begin to generate hypotheses about solutions.

Research on enquiry and problem-based learning

Enquiry methods are similar to discovery learning. Some research has shown that discovery methods are ineffective and even detrimental for lower-ability learners.

Learners who are better at self-regulation may benefit more from problem-based methods, but using problem-based methods over time can help learners to develop self-directed learning skills.

Dialogue and instructional conversations

Instructional conversations are instructional because they are designed to promote learning, but they are conversations, not lectures or traditional discussions. The teacher is a guide, helping learners construct their own understandings through dialogue.

Cognitive apprenticeships

With guided participation in real tasks comes participatory appropriation – learners appropriate the knowledge, skills and values involved in doing the tasks. There are many cognitive apprenticeship models, but most share six features:

1. Learners observe an expert model the performance
2. Learners get external support through coaching or tutoring
3. Learners receive conceptual scaffolding, which is then gradually faded as the learner becomes more competent and proficient
4. Learners continually articulate their knowledge – putting into words their understanding of the processes and content being learned
5. Learners reflect on their progress, comparing their problem solving to an expert's performance and to their own earlier performances
6. Learners are required to explore new ways to apply what they are learning – ways that they have not practised at the master's side

A cognitive apprenticeship in learning mathematics

Schoenfeld asked three questions: What are you doing? Why are you doing it? How will success in what you are doing help you find a solution to the problem? Each of these components is essential in helping learners to be aware of and to regulate their behaviours.

Apprenticeships in thinking

The advantage of stand-alone thinking skills programmes is that learners do not need extensive subject matter knowledge to master the skills. Learners who have had trouble with the traditional curriculum may achieve success – and perhaps an enhanced sense of self-efficacy – through these programmes. The disadvantage is that the general skills often are not used outside the programme unless teachers make a concerted effort to show learners how to apply the skills in specific subjects.

Critical thinking

These skills are useful in almost every life situation – even in evaluating the media advertisements that constantly bombard us. No matter which approach is used to develop critical thinking, it is important to follow up with additional practice.

The language of thinking



The language of thinking consists of natural language terms that refer to mental processes and mental products. Learners surrounded by a rich language of thinking are more likely to think deeply about thinking. People learn more when they engage in talk that is interpretive and that analyses and gives explanations.

Chapter 10 – Motivation in Learning and Teaching

What is motivation?

Motivation is usually defined as an internal state that arouses, directs and maintains behaviour.

Intrinsic and extrinsic motivation

Intrinsic motivation is the natural tendency to seek out and conquer challenges as we pursue personal interests and exercise capabilities. When we are intrinsically motivated, we do not need incentives or punishments, because the activity itself is rewarding.

Extrinsic motivation: we do something in order to earn a grade, avoid punishment, please the teacher, or for some other reason that has very little to do with the task itself.

General approaches to motivation

The concept of 'drive' within psychoanalytical theory corresponds with the notion of motivation. Freud suggested that people are often unaware of their real reason for acting in a certain way (motivation) which results in internal conflicts. The behavioural view of motivation rejected the notion of hidden, internal processes because they were impossible to observe or measure in a systematic way.

Behavioural approaches to motivation

A reward is an attractive object or event supplied as a consequence of a particular behaviour. An incentive is an object or event that encourages or discourages behaviour.

Humanistic approach to motivation

From the humanistic perspective, to motivate means to encourage people's inner resources – their sense of competence, self-esteem, autonomy and self-actualisation. Maslow's theory has been an influential humanistic explanation of motivation.

Maslow's hierarchy

Hierarchy of needs: ranging from lower-level needs for survival and safety to the top-level of self-actualisation. Self actualisation is self-fulfilment and the realisation of personal potential. Each of the lower needs must be met before the next higher need can be addressed.

Deficiency needs: survival, safety, belonging and self-esteem. Being needs: the top-level needs (growth needs).

Cognitive and social cognitive approaches to motivation

Cognitive theorists emphasise intrinsic motivation: people are viewed as active and curious, searching for information to solve personally relevant problems.

Expectancy value theories

Expectancy value theories: theories that take into account both the behaviourists' concern with the effects or outcomes of behaviour and the cognitivists' interest in the impact of individual thinking. Motivation is a product of the individual's expectation of reaching a goal and the value of that goal to them.

Sociocultural conceptions of motivations

Sociocultural views of motivation emphasise participation in communities of practice. Legitimate peripheral participation means that beginners are genuinely involved in the work of the group, even if their abilities are undeveloped and their contributions are small. Engagement is meaningful participation in a context where to-be-learned knowledge is valued and used.

Needs: Competence, Autonomy and Relatedness

Self-determination

Self-determination theory suggests that we all need to feel competent and capable in our interactions in the world, to have some choices and a sense of control over our lives and to be connected to others – to belong to a social group. Need for autonomy: the desire to have our own wishes determine our actions.

Self-determination in the classroom

Controlling environments tend to improve performance only on rote recall tasks. It seems that one answer is to focus on information, not control, in interactions with learners.

Information and control

Cognitive evaluation theory explains how all the events on a school day influence the learners' intrinsic motivation by affecting their sense of self-determination and competence. Teachers should praise children by focusing on the learner's growing competence.

The need for relatedness

The desire to establish close emotional bonds and attachments with others. Learners who feel a sense of relatedness to teachers, parents and peers are more emotionally engaged in school.

Needs: lessons for teachers

Learners need appropriately challenging tasks – not too easy, but not impossible either. They also benefit from ways of watching their competence grow and from being emotionally more involved.

Goal orientations and Motivation

A goal is an outcome or attainment an individual is striving to accomplish. Goals motivate people to act in order to reduce the discrepancy between where they are and where they want to be. According to Locke and Latham, there are four main reasons why goal setting improves performance. Goals:

- direct our attention
- energise effort
- increase persistence
- promote the development of new knowledge and strategies

Types of goals and goal orientations

Four goal orientations in school

Goals are specific targets. Goal orientations are patterns of beliefs about goals related to achievement at school. The point of a mastery goal is to improve, to learn, no matter how many mistakes you make or how awkward you appear. Because they focus on the task at hand and are not worried about how their performance 'measures up' compared to others in the class, these learners have been called task-involved learners.

Learners with performance goals care about demonstrating their ability to others. The evaluation of their performance by others, not what they learn, is what matters. These learners have been called ego-involved learners.

Are performance goals always bad?

The real problem lies with avoidance: learners who fear misunderstanding (mastery avoid) or avoid looking stupid (performance avoid).

Beyond mastery and performance

Work-avoidant learners: try to complete assignments and activities as quickly as possible without exerting much effort. Social goals: include a wide variety of needs and motives that have different relationships to learning – some help, but some hinder learning.

Feedback and goal acceptance

There are two additional factors that make goal setting in the classroom effective: feedback (accurate sense of your current status and how far you have to go) and goal acceptance (whether or not it is doable for example).

Goals: lessons for teachers

Teachers shouldn't focus on performance goals. They should give good encouragement and accurate feedback about goals set by the pupils. The goals should be about learning and improving and they have to make sure the goal is not too difficult.

Interests and Emotions

Learners are more likely to pay attention to, learn about and remember events, images and readings that provoke emotional responses or that are related to their interests.

Tapping interests

Personal or individual interests are more enduring aspects of the person, such as an enduring tendency to be attracted to or to enjoy subjects such as languages, history or mathematics, or activities such as sports, music or films.

Situational interests are more short-lived aspects of the activity, text or materials that catch and keep the learner's attention.

Catching and holding interests

Teachers have to rely more on situational interest. However, the challenge is to not only to catch but also to hold learners' interest. Fantasy can be an important source of interests, just as problems that are alike to problems in everydaylife.

Arousal: excitement and anxiety in learning

Arousa involves both psychological and physical reactions. Psychologists have known for years that there is an optimum level of arousal for most activities. Higher levels of arousal are helpful on simple tasks, lower levels of arousal are better for complex tasks.

Curiosity: novelty and complexity

Curiosity could be defined as a tendency to be interested in a wide range of areas. Some research suggests that curiosity arises when attention is focused on a gap in knowledge. Implications: learners need some base of knowledge to experience gaps, learners must be aware of the gaps and finally the more we learn about a topic, the more curious we may become about that subject.

Anxiety in the classroom

Some people tend to be anxious in many situations as it is part of their personality (trait anxiety), but some situations are especially anxiety provoking (state anxiety). It is always negative.

How does anxiety interfere with achievement?

Anxiety interferes with learning and test performance at three points: focusing attention, learning and testing. They have less attention, find it hard to learn and may have a 'freeze and forget' during the test.

Coping with anxiety

When learners face stressful situations such as tests, they can use three kinds of coping strategies: problem solving (planning a study schedule), emotional management (relaxation exercises) and avoidance (going out for a pizza).

Interests and emotions: lessons for teachers

Learning about their interests and incorporating these interests into lessons and assignments would be helpful.

Beliefs and Self-Schemas

Beliefs about ability

Adults use two basic concepts of ability. An entity view of ability assumes that ability is a stable, uncontrollable trait – a characteristic of the individual that cannot be changed. According to this view, some people have more ability than others, but the amount each person has is set.

An incremental view of ability suggests that ability is unstable and controllable – ‘an ever-expanding repertoire of skills and knowledge’. By hard work, study or practice, knowledge can be increased and thus ability can be improved.

Beliefs about causes and control: attribution theory

Attribution theories of motivation describe how the individual’s explanations, justifications and excuses about self or others influence motivation.

According to Weiner, most of the attributed causes for successes or failures can be characterised in terms of three dimensions:

1. locus (whether it is internal or external to the person)
2. stability (likely to stay the same in the near future or can change)
3. controllability (can the person control the cause)

Attributions in the classroom

The greatest motivational problems arise when learners attribute failures to stable, uncontrollable causes. Individuals who view their failures in this light are less likely to seek help: they believe nothing and no-one can help.

Teacher actions and learner attributions

If a teacher offers help without the learner asking for it, children feel as if he is less intelligent. They can also think that they just can’t do a specific task if the teacher gives them a ‘good try anyway’.

Beliefs about self-efficacy

Self-efficacy and attributions affect each other. If success is attributed to internal or controllable causes such as ability or effort, then self-efficacy is enhanced. Having a strong sense of self-efficacy for a certain task encourages controllable attributions, and controllable attributions increase self-efficacy.

Beliefs about learned helplessness

When people come to believe that the events and outcomes in their lives are mostly uncontrollable, they have developed learned helplessness. Learned helplessness appears to cause three types of deficits: motivational, cognitive and affective.

Beliefs about self-worth

Mastery-oriented learners tend to value achievement and see ability as improvable, so they focus on mastery goals in order to increase their skills and abilities.

Failure-avoiding learners tend to hold an entity view of ability, so they set performance goals.

Failure-accepting learners are convinced that their problems are due to low ability.

Beliefs and self-schemas: lessons for teachers

Believe they lack the ability to do something: act on this belief, have little motivation. Believe that failing means they are stupid: adopt many self-protective, self-defeating strategies.

Learners need real evidence that effort will pay off, that setting a higher goal will not lead to failure, that they can improve and that abilities can be changed.

Motivation to Learn in School

Motivation to learn is a student's tendency to find academic activities meaningful and worthwhile and to try to derive the intended academic benefits from them. It also includes the quality of the learner's mental efforts.

Three major goals of teachers:

1. to get learners productively involved with the work of the class, to create a state of motivation to learn
2. to develop in learners the trait of being motivated to learn so they will be able to educate themselves throughout their lifetime
3. to get their learners to be cognitively engaged – to think about what they study

Tasks for learning

Task value

Learners' beliefs about the value of a task seem to predict the choices they make, such as whether to enrol in advanced science classes or join a team. We can think of a task value as having four components: importance, interest, utility and cost.

- Importance or attainment value: significance of doing well on the task
- Interest or intrinsic value: the enjoyment one gets from the activity
- Utility value: help us achieve a certain goal
- Costs: negative consequences that might follow

Authentic tasks

An authentic task is one that has some connection to the real-life problems and situations that learners will face outside the classroom, both now and in the future. Problem-based learning makes use of authentic tasks.

Supporting autonomy and recognising accomplishment

Supporting choices

Unbounded choice: draw or write about anything you want in any way you want. Bounded choice: giving learners a range of options that set valuable tasks for them, but also allow them to follow personal interests.

Recognising accomplishment

Feedback should be specific and realistic in order to have a positive effect.

Grouping, evaluation and time

Grouping and goal structures

Goal structures of the task. Cooperative (involves team work and team achievements), competitive (individuals believe they can only achieve their goals if others do not) and individualistic (learners believe their own progress is not related to that of others).

Evaluation

How can teachers prevent learners from simply focusing on the grade or doing the work 'just to get finished'? Pupils need to understand the value of the work. One way to emphasise learning rather than grades is to use self-evaluation so that pupils are encouraged to assess their own work or progress.

Chapter 11 – Engaged Learning: Cooperation and Community

Social Processes in Learning

The three main social influences on pupils are peers, parents and teachers.

Peers

Both girls and boys are not protected from peer pressure. It's just that girls are more likely to perform well at school and still be part of the 'in-crowd'. Boys don't want to look like geeks and therefore perform less. Social relationships constitute a crucial component of school life, and the consequences of social failure – frequently marginalisation and/or bullying – can be extremely distressing for all pupils.

Parents and teachers

A high level of psychological control exercised by mothers combined with high affection predicted increases of the levels of problem behaviours among children. Behavioural control exercised by mothers decreased children's external problem behaviour, but only when combined with a low level of psychological control.

A child's behaviour will probably be greatly influenced by the quality of love and the stability of the home environment, and the control given.

Pupils who have few friends, but are not rejected – simply ignored by other pupils – can remain on-track academically and socially when they are liked and supported by teachers.

Collaboration and Cooperation

Academic learning is the prime directive, but schools have major responsibilities for other aspects of pupils' development as well, such as helping pupils develop the attitudes, skills and orientations needed to lead humane lives and act effectively as citizens to sustain democratic institutions.

Collaboration, group work and cooperative learning

According to Theodore Panitz, collaboration is a philosophy about how to relate to others – how to learn and work. It is a way of dealing with people that respects differences, shares authority and builds on the knowledge that is distributed among other people. Cooperation is a way of working with others to attain a shared goal. It has roots in the work of teachers who wanted their pupils to respond in more active ways as they learned. You could say that cooperative learning is one way to collaborate.

Group work, on the other hand, is simply several pupils working together – they may or may not be cooperating but they might be collaborating.

Beyond groups to cooperation

Different learning theory approaches favour cooperative learning for different reasons. The important idea for you to embrace is that children can accomplish cognitive tasks with social support and scaffolding that pupils need to move learning forward.

What can go wrong: misuses of group learning

Mary McCaslin and Tom Good list several potential disadvantages of group learning:

- pupils often value the process or procedures over the learning. Speed and finishing early take precedence over thoughtfulness and learning
- rather than challenging and correcting misconceptions, pupils support and reinforce misunderstandings
- socialising and interpersonal relationships may take precedence over learning
- pupils may simply shift dependency from the teacher to the 'expert' in the group – learning is still passive and what is 'learned' can be wrong

- status differences may be increased rather than decreased. Some pupils learn to 'free-wheel' because the group progresses with or without their contributions. Others become even more convinced that they are unable to understand without the support of the group

Tasks for cooperative learning

Tasks for cooperative groups may be more or less structured. Highly structured tasks include work that has right answers. Gently structured complex tasks have multiple answers and unclear procedures. These gently structured complex tasks are true group tasks.

Highly structured, review and skill-building tasks

In the STAD (Student Teams Achievement Divisions) technique, teams of four pupils compete to determine which team's members can amass the greatest improvement over previous achievement levels.

Gently structured, conceptual and problem solving tasks

In these tasks an open exchange and elaborated discussion will be more helpful. Strategies that encourage interaction include open-ended techniques such as:

- reciprocal questioning (teachers and pupils exchange q&a)
- reciprocal teaching (teachers and pupils exchange summaries, explanations, etc.)
- pair-share (pairs of learners share initial understanding)
- jigsaw (one member of a group swaps to another group)

When rewards are offered, the goal often becomes achieving the reward as efficiently as possible.

Social skills and communication tasks

When the goal of peer learning is enhanced social skills or increased inter-group understanding and appreciation of diversity, the assignment of specific roles and functions within the group might support communication (rotate leadership). Rewards aren't recommended.

Preparing pupils for cooperative learning

- pupils interact face-to-face and close together, not across the room
- group members experience positive interdependence – they need each other for support etc.
- members of the group are held individually accountable for learning
- collaborative skills are necessary for effective group functioning (often must be taught and practised before the groups tackle a learning task)
- members monitor group processes and relationships

Setting up cooperative groups

4-6 pupils: review, rehearse information or practise

2-4 pupils: encourage each pupil to participate in discussions, problem solving, computer learning

It is advisable to balance the number of boys and girls.

Giving and receiving explanations

Pupils who ask questions, get answers and attempt explanations are more likely to learn than pupils whose questions go unasked or unanswered. There is evidence that the more a pupil provides elaborated, thoughtful explanations to other pupils in a group, the more the explainer learns. In order to explain, you have to organise the information, put it into your own words, think of examples and analogies and test your understanding by answering questions. These are excellent learning strategies.

Assigning roles

If you use roles, be sure that the roles support learning. Make sure you don't communicate to pupils that the major purpose of the groups is simply to do the procedures – the roles. Roles are supports for learning, not ends in themselves.

Designs for cooperation

Reciprocal questioning

This requires no special materials or testing procedures and can be used with a wide range of ages.

Scripted cooperation

Pupils work together on almost any task including reading a selection of text, solving maths problems or editing writing drafts. Next, the partners work together to elaborate on the information – create associations, images, etc. The partners switch roles and then continue to take turns until they finish the assignment.

Reaching every pupil: using cooperative learning wisely

Research has found that cooperative learning in general is not always effective for pupils with learning disabilities and the influence of classroom peers on cognitive performance in children with behavioural problems is usually detrimental.

With gifted children it is important to keep them engaged without losing the rest of the class.

The jigsaw approach was developed in response to needs for creating high interdependence in diverse groups. It's helpful with children learning EAL.

The Classroom Community

Johnson's three Cs for safe and productive schools: cooperative community, constructive conflict resolution and civic values.

Constructive conflict resolution

Conflicts are inevitable and even sometimes necessary for learning.

Peer harassment

The line between good-natured exchanges and hostile teasing may seem thin (robust none the less), but a rule of thumb is that teasing someone who is less powerful or less popular or using any racial, ethnic or religious slur should never be tolerated.

What can teachers do?

When teachers are silent about aggression and teasing, pupils may 'hear' agreement with the insult. There is some evidence that in primary schools, conflicts most often centre on disputes over resources and over preferences.

Avoidance, force and threats seem to be the major strategies for dealing with conflict. But there are better ways – peer mediation and negotiation strategies that teach lifelong lessons.

Peer mediation and negotiation

David Johnson learned pupils a five-step negotiating strategy:

1. Jointly define the conflict
2. Exchange positions and interests
3. Reverse perspectives
4. Invent at least three agreements that allow mutual gain
5. Reach an integrative agreement

Johnson and Johnson also examined the effects of peer mediators: the effects were positive.

Civic values

These are the understandings and beliefs that hold the community together. Values are learned through direct teaching, modelling, reading literature, engaging in group discussions and sharing concerns.

Teaching civic values through the curriculum: an example of global citizenship and resolving conflict (through participation)

Pupils research conflicts with the UN and Human Rights. They feel like they're doing something about it: they feel useful.

Getting started on community

Learning and knowing something about civic values, citizenship and cooperation is part of the first steps in setting up and maintaining a community. Many people argue you can't have a community without an agreed way of behaving towards each other – a set of rules or a charter.

Building a classroom community also takes daily attention to showing that each pupil is respected, that individual's cares and worries are acknowledged and that they bring special needs to the class community which they join each morning.

More about belonging

Pupils are more likely to have a sense of belonging in school when they believe their teachers care about them. Pupils believe teachers care when disciplinary procedures are fair and respectful and when the teachers use humour to connect with their pupils. In other words, the teachers trust and respect their pupils and care about them as learners and as people.

Violence in Schools

Prevention

As a teacher, you may have little to say about violence on television, metal detectors or knife ownership among young people – but you have much to say about the way pupils treat each other and the sense of community created in your classes.

Some studies have argued that poor parenting, school staff victimisation of pupils, location of schools and particularly gang involvement are the main factors contributing to school violence and that teachers can have little influence.

Pupils reported joining gangs for security and to escape teachers who treated them badly or expected little of them because of their ethnicity.

Community Service Learning

This is another approach to combining academic learning with personal and social development for secondary and college pupils. Successful service learning activities:

- are organised and meet actual community needs
- are integrated into the pupils' curriculum
- provide time to reflect about the service experience
- provide opportunities to apply newly learned academic skills and knowledge
- enhance both academic learning and a sense of caring for others

Research concluded that pupils who did community service emerged from the course with a deeper awareness of social injustice, a greater sense of commitment to confront these injustices and heightened confidence in their abilities overall.

Chapter 12 – Creating Learning Environments

The Need for Organisation

The basic task: gain their cooperation

No productive activity can take place in a group without the cooperation of all members. The basic management task for teachers is to achieve order and harmony by gaining and maintaining pupil cooperation in class activities.

Jere Brophy and Carolyn Evertson identified four general stages of classroom management, defined by age-related needs.

Nursery and first few years of primary school: direct teaching of classroom rules and procedures is important.

Middle primary years: many classroom routines have become relatively automatic, new procedures for a particular activity may have to be taught directly and the entire system still needs monitoring and maintenance

End of primary school: some pupils begin to test and defy authority, challenges for teachers to deal productively with these disruptions

End of secondary school: challenges are to manage the curriculum, fit academic material to pupils' interests and abilities and help pupils become more self-managing

The goals of classroom management

The aim of classroom management is to maintain a positive, productive learning environment but the imposition of strict order for its own sake is an empty goal. So what, then, is the point of working so hard to manage classrooms?

1. More time for learning

Many minutes each day are lost through interruptions, disruptions, late starts and poorly managed lesson transitions. If there is plenty of time in school one important goal of classroom management is to expand the sheer number of minutes available for learning (sometimes called allocated or available time). Time spent actively involved in specific learning tasks often is called engaged time or sometimes time on task. When pupils are working with a high rate of success – really learning and understanding – we call the time spent successful learning time.

2. Access to learning

Participation structures are the rules defining who can talk, what they can talk about, and when, to whom and how long they can talk. To reach the second goal of good classroom management – giving all pupils access to learning – you must make sure everyone knows how to participate in class activities.

3. Management for self-management

The third goal of any management system is to help pupils become better able to manage themselves. The most fundamental purpose of discipline is the development of self-control, according to Tom Savage: Academic knowledge and technological skill will be of little consequence if those who possess them lack self-control. Encouraging self-management requires extra time, but teaching pupils how to take responsibility is an investment well worth the effort.

Creating a Positive Learning Environment

In one sense, teachers prevent discipline problems whenever they make an effort to motivate pupils. A plan for motivating pupils are steps towards preventing problems.

Rules and procedures required

Procedures

Procedures (often called routines) describe how activities are accomplished in classrooms, but they are seldom written down; they are simply the ways of getting things done in class.

Rules

Rules specify expected and forbidden actions in class. They are the dos and don'ts of classroom life. Rules should be positive, observable. To have a few rules that cover many specifics is better than to list all the dos and don'ts.

Rules for primary school

1. Respect and be polite to all people
2. Be prompt and prepared
3. Listen quietly while others are speaking
4. Obey all school rules

Consequences

As soon as teachers decide on rules and procedures, they must consider what they will do when a pupil breaks a rule or does not follow a procedure, for example going back to doing it right. Teachers can also use natural or logical consequences to support social/emotional development by doing the following:

- Teacher responses should separate the deed from the doer – the problem is the behaviour, not the pupil.
- Emphasise to pupils that they have the power to choose their actions and thus avoid losing control.
- Encourage pupil reflection, self-evaluation and problem solving – avoid teacher lecturing.
- Help pupils identify and give a rationale for what they could do differently next time in a similar situation.

Rights, responsibilities, rules, routines and consequences

Developing rights and responsibilities rather than just rules and routines makes a very important point to pupils.

Pupils should understand that the rules are developed so that everyone can work and learn together.

If teachers are going to involve pupils in setting rules or creating a constitution of rights and responsibilities, they may need to wait a little while until they have established a sense of community in the classroom.

Planning spaces for learning

In terms of classroom arrangement, there are two basic ways of organising space: shared interest areas and personal/group spaces.

Personal spaces

The action zone where participation is greatest may be in other areas such as on one side or near a particular area. To 'spread the action around', Weinstein and Mignano suggest that teachers move around the room when possible, establish eye contact with and direct questions to pupils seated far away, and vary the seating so the same pupils are not always consigned to the back.

Planning for computer uses

To get the greatest benefits from computers in your classroom, teachers must have good management systems.

Getting started: the first weeks

Effective class managers for primary pupils

- name badges and something interesting to do were ready
- teachers dealt with the children's pressing concerns first
- teachers are explicit about their expectations
- workable, easily understood set of rules of which they taught the most important rules right away

Effective classroom managers for secondary pupils

- focus on establishing rules, procedures and expectations on the first day
- pupil behaviour is closely monitored and infractions of the rules are dealt with quickly

- carefully follow each pupil's progress, so pupils cannot avoid work without facing consequences

Maintaining a Good Environment for Learning

Prevention is the best medicine

Kounin found that effective and ineffective teachers are not very different in the way they handle discipline once problems arise. The difference is that the successful managers are much better at preventing problems. Kounin concluded that effective classroom managers are especially skilled in four areas: 'withitness', overlapping activities, group focusing and movement management.

Withitness

This means communicating to pupils that you are aware of everything that is happening in the classroom – that you aren't missing anything. 'With-it' teachers seem to have eyes in the back of their heads.

Overlapping

This means keeping track of and supervising several activities at the same time.

Group focus

Maintaining a group focus means keeping as many pupils as possible involved in appropriate class activities and avoiding narrowing in on just one or two pupils.

Movement management

This means keeping lessons and the group moving at an appropriate (and flexible) pace, with smooth transitions and variety. The effective teacher avoids abrupt transitions, such as announcing a new activity before gaining the pupils' attention or starting a new activity in the middle of something else.

Caring relationships: connections with school

Pupils respect teachers who maintain their authority without being rigid, harsh or unfair and whose creative teaching style 'makes learning fun'. All efforts at building positive relationships and classroom community are steps towards preventing management problems.

Pupil social skills as prevention

All efforts to teach social and emotional self-regulation are steps for preventing management problems. Over the long term, teachers can help to change attitudes that value aggression over cooperation and compromise.

Dealing with discipline problems

Praise in public, reproach in private. Many teachers prefer the use of logical consequences as opposed to penalties. There is a caution about penalties. Never use lower achievement status as a punishment for breaking class rules.

Some common behavioural problems

The most important thing is to enforce the established consequences for incomplete work. Pupils need to know that the choice is theirs: they can do the work and succeed, or they can refuse to do the work and face the consequences. The teacher might also ask, in a private moment, if there is anything interfering with the pupil's ability to finish the work.

Effective teachers remain friendly with their pupils, try to catch them in a good moment so they can talk to the about something other than their rule-breaking.

Reaching every pupil: school-wide positive behaviour supports

IEP: Individual education plan (mostly for pupils with special educational needs).

Pre-correction involves identifying the context for a pupil's misbehaviour, clearly specifying the alternative expected behaviour, and modifying the situation to make the problem behaviour less likely.

The Need for Communication

Message sent-message received

Sometimes teachers believe they are sending one message, but their voices, body positions, choices of words and gestures may communicate a different message. The first principle of communication is that people respond to what they think was said or meant, not necessarily to the speaker's intended message or actual words. To avoid these problems, you can use the paraphrase rule.

Counselling: the pupil's problem

Empathetic listening: by trying to hear the pupil and by avoiding the tendency to jump in too quickly with advice, solutions, criticisms, reprimands or interrogations, the teacher keeps the communication lines open. When pupils realise they really have been heard and not judged negatively for what they have said or felt, they begin to trust the teacher and to talk more openly. Sometimes the true problem surfaces later in the conversation.

Confrontation and assertive discipline

'I' messages

Basically, this means telling a pupil in a straightforward, assertive and non-judgemental way what they are doing, how it affects you as a teacher, and how you feel about it.

Assertive discipline

An assertive response communicates to the pupils that you care too much about them and the process of learning to allow inappropriate behaviour to persist. Assertive teachers clearly state what they expect.

Confrontations and negotiations

There are three methods of resolving a conflict between teacher and pupil. One is for the teacher to impose a solution. The second method is for the teacher to give in to the pupil's demands. Thomas Gordon recommends a third approach, which he calls the 'no-lose method'. This is a six-step, problem-solving strategy:

1. Define the problem
2. Generate many possible solutions
3. Evaluate each solution
4. Make a decision
5. Determine how to implement the solution
6. Evaluate the success of the solution

Chapter 13 – Teaching for Learning

The First Step: Planning

- Planning influences what pupils will learn, because planning transforms the available time and curriculum materials into activities, assignments and tasks for pupils
- Teachers engage in several levels of planning – by the year, term, unit, week and day, and all these levels must be coordinated
- Plans reduce – but not eliminate – uncertainty in teaching. Plans are not made to be broken – but sometimes they need to be ‘bent a little’
- No matter how teachers plan, they must have learning objectives in mind

Objectives for learning

Objectives are the performances pupils are expected to demonstrate after teaching, to show that they have learned what was expected of them. Behavioural views: list, define, add or calculate. Cognitive views: understand, recognise, create or apply.

Mager: start with the specific

His idea is that objectives ought to describe what pupils will be doing when demonstrating their achievement and how teachers will know they are doing it (behavioural objectives). According to Mager, a good objective has 3 parts:

1. it describes the intended pupil behaviour
2. it lists the conditions under which the behaviour will occur
3. it gives the criteria for acceptable performance on the test

Grondlund: start with the general

He believes that an objective should be stated first in general terms (cognitive objectives). Then the teacher should list a few sample behaviours that would provide evidence that the pupil has attained the objective.

Flexible and creative plans – using taxonomies

Bloom and his colleagues developed a taxonomy, or classification system, of educational objectives. They were divided into three domains: cognitive, affective and psychomotor.

The cognitive domain

Six basic objectives:

1. Knowledge (without necessarily understanding, using or changing it)
2. Comprehension (without necessarily relating it to anything else)
3. Application (using it)
4. Analysis (breaking it down into its parts)
5. Syntheses (create something new by combining different ideas)
6. Evaluation (judging the value of materials or methods)

1 to 3 are sometimes seen as lower-level, and the other categories considered higher-level.

Bloom’s taxonomy

A group of educational researchers have changed this taxonomy a bit. Knowledge became remembering, comprehension became understanding and synthesising became creating. They also added a new dimension: the processes should act on some knowledge. Therefore they came up with four kinds of knowledge – factual, conceptual, procedural and metacognitive.

The affective domain

Five basic objectives:

1. Receiving (I'll listen to the concert but I won't promise to like it)
2. Responding (person might applaud after the concert or hum some of the music the next day)
3. Valuing (person might choose to go to a concert instead of a film)
4. Organisation (person would begin to make long-range commitments to concert attendance)
5. Characterisation by value (firmly committed to a love of music and demonstrate it openly)

The psychomotor domain

Objectives should be:

1. Pupil-oriented (what should the pupil do)
2. Descriptive of an appropriate learning outcome (developmentally appropriate and appropriately sequenced)
3. Clear and understandable
4. Observable (not 'appreciating' or 'realising')

Another view: planning from a constructivist perspective

In constructivist approaches, planning is shared and negotiated. The teacher and pupils together make decisions about content, activities and approaches. Teacher has 'big ideas'.

Integrated and thematic plans

Teaching through themes and integrated content are increasingly major elements in planning and designing lessons and units.

Teaching

There are a lot of ways to investigate teaching. Often, and over the past 15 years, researchers have used the relationships identified between teaching and learning as the basis for developing teaching approaches and testing these approaches in design experiments.

Characteristics of effective teachers

Three teacher characteristics: knowledge, clarity and warmth.

Teachers' knowledge

Teachers who know more facts about their subject do not necessarily have pupils who learn more. But they may make clearer presentations and recognise pupil difficulties more readily. Thus, knowledge is necessary (but not sufficient) for effective teaching, because being more knowledgeable helps teachers be clearer and more organised.

Clarity and organisation

The less vague the teacher, the more the pupils learn.

Warmth and enthusiasm

Warmth, friendliness and understanding seem to be the teacher traits most strongly related to pupil attitudes. But notice, these are descriptive or correlational studies. The results do not tell us that teacher enthusiasm causes pupil learning or that warmth causes positive attitudes, only that the two variables tend to occur together.

Explanation and presentation

Teacher presentations are most appropriate for cognitive and affective objectives at the lower levels of the taxonomies described earlier: for remembering, understanding, receiving, responding and valuing.

Whole-class teaching

This is teaching characterised by high levels of teacher explanation, demonstration and interaction with all the pupils at the same time. Whole-class teaching seems to apply best to the teaching of basic skills – clearly structured knowledge and essential skills.

Why does whole-class teaching work?

If done well, a whole-class teaching lesson could be a resource that pupils use to construct understanding. Every subject can require some direct instruction. Pupils may need instruction in how to use various materials or tools to get the possible benefits from them.

Evaluating whole-class teaching

Disadvantages: some pupils may be able to only listen for five minutes. Others might gain a passive position because the teachers are doing much of the cognitive work for them.

Scripted cooperation is one way of incorporating active learning into whole-class teaching: for example summarising in pairs a part of the presentation.

Individual class work and homework

Individual class work

Pupils should see the connection between the individual class work and what they have been taught at first. The objectives and the purpose should be clear, all the materials that might be needed should be provided, and the work should be matched to the ability of the pupils well enough that pupils can succeed on their own. Success rates should be high – when it is too difficult, pupils often resort to guessing or copying just to finish.

Homework

To benefit from individual class work or homework, pupils must stay engaged and do the work. It must be very clear what is expected of them and it must be checked as soon as possible after completion.

Making class work and homework valuable

To be available, teachers should move around the class and avoid spending too much time with one or two pupils. Short, frequent contacts are best.

Questioning and recitation

Recitation: teachers pose questions, pupils answer. Three parts: initiation (the question), response (an answer) and follow-up (feedback from teacher).

Kinds of questions

You can categorise questions in terms of Bloom's taxonomy of objectives in the cognitive domain. Another way to categorise them is in terms of convergent questions (only one right answer) or divergent questions (many possible answers).

Fitting the questions to the pupils

Low-ability pupils benefit more from simple questions, high-ability pupils have a successful pattern that includes harder questions. It is very important for teachers to wait 3 to 5 seconds before going on to another question. The most important thing to remember is allowing pupils an adequate length of wait time to answer the question seems to lead to better quality of answers.

Responding to pupil answers

- quick, firm and correct answer: accept it or as another question

- correct but hesitant answer: give feedback about why the answer is correct
- partially or completely wrong answer but honest attempt: give more information, clues, simplify
- wrong, silly, careless answer: correct the answer and go on

Group discussion

This is in some ways similar to the recitation strategy, but it should be more like the instructional conversations described in chapter 9. In a true group dialogue, the teacher does not have a dominant role. Advantages:

- pupils are directly involved and have the chance to participate
- helps pupils learn to express themselves clearly, to justify opinions and tolerate different views
- gives pupils a chance to ask for clarification, examine their own thinking, evaluate ideas, etc.

Disadvantages:

- quite unpredictable
- may easily digress into exchanges of ignorance
- some members of the group may have great difficulty participating and become anxious if forced to speak

Teacher Expectations

Rosenthal and Jacobson: Pygmalion effect, one kind of self-fulfilling prophecy in the classroom. A self-fulfilling prophecy is an expectation that leads to behaviours that then make the original expectation come true.

Two kinds of expectation effects

First expectation effect: the self-fulfilling prophecy. The second kind of expectation effect occurs when teachers are fairly accurate in their initial reading of pupils' abilities and respond to pupils appropriately. The problems arise when pupils show some improvement, but teachers do not alter their expectations to take account of the improvement. This is called a sustaining expectation effect, because the teacher's unchanging expectation sustains the pupil's achievement at the expected level.

Sources of expectations

- intelligence test scores
- gender (expect more behaviour problems from boys than from girls)
- notes from previous teachers and the medical or psychological reports found in cumulative folders
- knowledge of ethnic background
- prior experience of older brothers and sisters
- previous achievement
- socioeconomic status
- actual behaviours
- even the pupil's after-school activities

Do teachers' expectations really affect pupils' achievement?

The power of the expectation effect depends on the age of the pupils and on how differently a teacher treats high-versus low-expectation pupils.

Teaching strategies

Activities become inappropriate when pupils who are ready for more challenging work are not given the opportunity to try it because teachers believe they cannot handle it. This is an example of the sustaining expectation effect.

Teacher-pupil interactions

The challenge is to deal with very real threats to classroom management without communicating low expectations to some pupils or fostering their own low expectations of themselves.