

The Psychology of Great Teaching: (Almost) Everything teachers ought to know

by Pedro de Bruyckere, Caspar Hulshof, Liese Missinne (2022)



Summary by Helen Reynolds <https://itslearningcurve.education/>

Content	Questions/Thoughts
Introduction “Almost” because ‘for use in everyday life and practice’. Choices : minimal history, most current info, based on what teachers (Ts) need to know , has practical applications.	- Can’t cover everything - Text = need to know/boxes = nice to know
How do we know something in psychology? Observation → formulate hypothesis/ theory → collect data (via research), look for connection (correlation, causal in one/other direction, third factor causing both), plan data collection carefully (randomized control trials (RCT), blind/ double blind trials, tools are valid and reliable , should be replicable (a lot of studies are not).	- Can’t do experiments to test every hypothesis, can use observation/survey - Time related → longitudinal (lengthy) - Cross section → quicker, less reliable
1.1 1.1. What determines what I am? Nature, nurture or something else. History: Locke = tabula rasa, Rousseau = born good & corrupted. Truth = complex/nuanced. Research = twins studies. What we know: all characteristics partially hereditary , both genes (G) & environment (E) contribute to individual differences, with their relative influence varying between characteristics. Lots cannot be explained by G or E (need interactions/ transactions, free choices). E can affect G expression through epigenetic mechanisms; evidence for transmission across human generations remains limited. G + E interact in complex ways; G do not simply set fixed upper and lower limits.	- Effect of genes increases as you age as effect of parental environment fades - Need to optimize the environment – sub-optimal very limiting - We have periods when we are sensitive to learning/changes, harder later.
1.2. How does personality develop? Who am I? Use dimensions (on a scale) not typographies. Definitions: temperament (G, attributes that don’t tend to change e.g. reacting positively/ activity), character (G&E, develops later, related to willpower/morality), personality (defining set of behaviours, knowledge (K), opinions, emotional patterns, Big 5 personality traits : extroversion, agreeableness, conscientiousness, neuroticism, openness, impacts interpersonal relationships, also Dark Triad: Machiavellianism, narcissism, psychopathy), identity (subjective sense of self, links to continuity, Erikson: babyhood/infancy/early+late childhood/adolescence/early+mid+late adult-hood, Marcia = identity in adolescence via experimenting: achievement (exploration followed by commitment) / foreclosure (commitment without prior exploration) / moratorium (active exploration without commitment) / identity diffusion (neither exploration nor commitment).	Six dimensions for Ss – add activity, they change during adolescence (12 – 24 yo) ... but stable (ish) by the end of it - Character and personality can change - Significant identity development happens during adolescence - Be wary of types (e.g. Myers-Briggs) - You can influence but not define - Growth mindset is not a miracle cure
1.3 Attachment as an important starting point Three types of attachment, when parent leaves the room/return: secure (SA) (child upset/comforted), avoidant- insecure (Avol)(less upset/ not comforted), ambivalent-resistant-insecure (AmbI)(very upset, seeks contact on return but is difficult to comfort, may resist contact). SA child : produced by mind-minded carers (attuned to child’s needs), can assess feelings of others/deal well with their emotions, make relationships more easily later, adjust to school more easily, less likely to develop psychopathologies later. Modelling (e.g. apologizing for mistakes, recognizing) helps Insecure A.	- Type more depended on E than G - Most adults ≈60% SA, 30% Avol, 10% AmbI BUT averages, varies with SES. - SA basis of a good relationship with teachers as well as parents - Provide safe environment
1.4 Moral development: the difference between right and wrong and how we learn it. Kohlberg: 3 levels + Stages: pre-conventional (S1-avoids punishment, S2-further own interests), conventional (S3-doing good + golden rule, S4- maintaining social order: respecting laws, duties and authority), post-conventional (S5-value & rules are relative, S6- reasoning →universal ethical principles + conscience) BUT work was mainly with boys , ‘thinking’ not the same as ‘doing’. Needs theory of mind (ToM), can test for it, develops gradually , around age four many children begin to pass standard false-belief tasks, but development continues beyond this age. can be supported using scenarios with humans.	- Not everyone reaches final Stage - Reaching final Stage doesn’t necessarily mean you’re a good person - When dealing with bad news: age 4-6 shield them, age 7+ can distinguish fact/ fiction, 9-12 need nuance, clarification
1.5 Intelligence: more than just a figure after taking a test. Intelligence (Int.) measures agent’s ability to achieve goals in a wide range of Es . Historically, IQ was calculated as mental age ÷ chronological age × 100. Modern IQ tests use age-normed standard scores, typically with an average of 100., test measures verbal & performance ability . Fluid Int. (dealing/solving new problems) + crystallized Int. (using acquired K & skills) = general Int. (g). Gardner’s multiple Ints → no predictive value/ out-of-date . Dark side: eugenics, racism.	- Schooling improves IQ by 1-5pts/year - IQ can be masked by stress/anxiety - IQ good predictor of later school performance/ helps identify those who need extra support
1.6 Cognitive development (CD): when do we understand what we understand. Piaget’s stages now open to question/superseded. CD happens in relation to others, Vygotsky’s Zone of Proximal Development ← of child in relation to external world (not skill/K). Promising new theory: Dynamic Systems Theory (DST): B is multicausal (many factors), self-organisation →simple set of rules that factors obey. Critical for CD : learning E with lots of interaction , and sleep !	- CD is continuous with periodic leaps - Starts before birth, each CD unique - DST (work in progress) takes account of complexity/dynamism of CD... ... due to interactions
1.7 Language development: from babbling to Language acquisition biologically primary , brain has wiring AND confirmation/conditioning from E. Spoken language usually no need for explicit formal instruction, does need exposure/social interaction. Pre-linguistic phase : starts early, happens quickly (months), first word by 10-12 months (but understand many words). Pragmatic development : meta-linguistic awareness (thinking about what you’re saying) from age 6/7. Learning to read/write/2 nd language → biologically secondary – needs teaching .	- Comprehension precedes speech (22 words/month vs 9 words/month) - Between 2 & 17 learn 11 word/day (ave) - Reading 1 book/day → estimated 1.4 million words by age 5 - Bilingualism: benefits not reproducible.
1.8 Physical development: enormous changes. E from conception → birth (stress/ drugs/ medicines) has big effect . Teenage pregnancy: need sensitive handling, rates have fallen. First 2 years: rapid physical evolution, helpless → walking/motor skills, sensations → perception, senses well developed at birth. Primary school: slower growth, fine motor skill. Puberty : primary & secondary sexual characteristics, can produce shame, cognitive ability improves increasing rate.	- Classical music played to fetus does not increase Int. - Stress should be avoided in pregnancy - Drawing helps motor skills + cognitive development
1.9 Let’s talk about sex(ual development). Gender is not binary : gender identity (how they describe themselves), gender expression (external presentation), sex (assigned at birth, M/F/inter-sex), romantic (who they’re attracted to). At 1yo can distinguish men/women. Adolescence : period of exploration ,	‘Youth of today’ don’t start earlier with sex – availability heuristic

types of relationship vary with culture/region, need unconditional support , screen/social media can cause issues, should be limited with children.	- Sexual development accompanied by strong emotions - Post - True/helpful/necessary/kind
1.10 The development of playing: not just a game. Play crucial to physical/motor/cognitive/ social development. Play is free/not real/not ordinary life/creates order (with others)/profit-free. Types: functional (early years, simple, repetitive), constructive (4yo+, building things, working with others, parallel (infants, alongside), onlooker , associative , cooperative – training for friendship.	- Both free/structured play important - Parents first playmates stay important - Aggressive game playing does not lead to aggression later.
2 Others 2.1 The bio-ecological model of Bronfenbrenner (or how you need a whole village to raise a child). Bronfenbrenner bio-ecological model: child → microsystems (family/school/friends) around it, interact to make → mesosystems , may strengthen if similar messages, problem if they conflict impacted by → exosystem (media, education system, economy) influenced by → macro-system (culture, societal values) + chronosystem (how time interacts with child/systems)	- Model useful to plot effect of influences - Provides framework/ language for discussing child's situation e.g bullying - Collective effort/cohesion will be more effective in helping children
2.2 Which parenting or teaching style should you adopt? How you were brought up has long-lasting effect. Parenting styles: authoritative/authoritarian/indulgent/uninvolved on warm/cold & control/no control spectra, but can change over time. Effects (correlational): neglectful → substance abuse/delinquency. Authoritative (warm/gives autonomy) → better outcomes . The 4 styles can translate to teaching – again, authoritative works best → Ss feel positive and do well.	- Provide secure, consistent environment with autonomy within, explain reasons. - Be aware of influencing factors - Manage negative behaviour together with teaching good behaviour
2.3 Friends and other relationships Infancy: ≈3yo first friendships form, linked to play, grows trust + respect, links to moral development/ToM (needed for popularity). Friendships based on: 4-7yo - behaviour, 8-10yo - trust, 11yo+ - psychological compatibility → more intense. Popularity linked to: reciprocity/social understanding/helpfulness/leadership, on a spectrum. Best friend → training for mental intimacy, Friendships offset loneliness/negative home situation. 10-14yo peak time of adjusting behaviour to belong to group ← important to 'be included'.	- Early interactions v. influential & provide first basis for social relationships - Where you sit Ss can affect their popularity (!) (edges = less fun) - Non-acceptance in a group can affect performance/lead to bullying
3 Learning 3.1 Everything starts with perception We all perceive differently. Most sensory info is not perceived. Perception is bottom/up , attention is top/down → inattention blindness (see Monkey Business Illusion). Brain constructs reality by linking perception to PK. Babies arrive with ability to recognize faces + some logic. Laws of perception: proximity (we see close things as a group), similarity (we put similar things together), closure/continuity (shapes that are not complete are perceived as closed), figure/ground (things are either in the foreground or back-ground). We remember first (primacy) and last (recency) most. Other effects: halo, Pygmalion.	- What we perceive depends on what we know (prior K) + context - Know the laws of perception - Use primacy/recency effect in planning - Errors in perception → stereotyping/ prejudice/biases - Beware self-fulfilling prophecies.
3.2 Learning Definition = perceivable mastery of new behaviour (B)/adaptation of old one. Informal/ primary (learning language/faces) vs formal/ secondary (reading/writing/academics). Perspectives: 1. Behaviourism (classic conditioning (Pavlov), operant conditioning (based on reward), + internal motivations + obs. of modelled B, lots not known) 2. Cognitive: (Ebbinghaus, forgetting curve, overlearning + spaced practice beneficial) 3. Cognitive load: (Sweller, novices working memory (WM) easily overloaded e.g. discovery learning). 4. Social-constructivism: (learning in relation to others not localized in brain, K not individualized, theory of K not learning).	- Model exemplary behaviour - Repetition is crucial for learning - Prior knowledge important starting point for instruction - Minimally guided instruction not effective for novices - Psychology of learning has many facets
3.3 What is the difference between a beginner (Beg) and an expert (Exp)? K organized differently in brains of Exp compared to Beg, Exps easily know what is meaningful AND what to ignore . Build up K slowly with Begg, avoid cognitive overload , Exps can be thrown in the deep end. Stages → Exp: cognitive/associative/autonomous or acclimation/competence/proficiency. Needs lots of deliberate practice + advice/feedback to get K → long-term memory (LTM), frees WM.	- Select different methods for Beg/Exp - Expertise about flexibility of thinking (fluid intelligence, needs domain K) - Aim for automaticity 10 000 hours to be expert is not a thing
4 Behaviour 4.1 Everything under the control of our executive functions Marshmallow expt – not clear if causation or correlation. Various executive function (EF) definitions: response inhibition/ emotional control/ sustained attention/ task initiation/flexibility/goal-directed persistence, OR inhibition/interference control/WM/flexibility OR anticipation/planning/execution/self-monitoring. All are important. EF development linked to maturation of prefrontal cortex (PFC) up to 23yo; types of impulse control develop: motor → verbal → emotional alongside WM development + ability to plan/look ahead/anticipate + flexibility in thinking.	- EF – no agreed definition in humans - Possible link between EF and autism - Ability to focus at 3 predicts that ability at 5 so G, but also strong impact of E - Not clear how to improve EF long-term - Metacognition very beneficial - See pages 224 – 230 for strategies
4.2 Motivation Intrinsic vs. extrinsic too simplistic , need self-determination theory (SDT) (other theories exist!). SDT: amotivation → controlled (C) → autonomous (A) differing in 1. Regulation/ drive: none/ lack of belief → external/reward/punishment → introjection (self-imposed pressure) /guilt/ fear → identified (with personal value)/purpose → intrinsic (what you like)/pleasure 2. Underlying emotions: fear of failure → stress/pressure → voluntary 3. Internalization: none → partial → full. 4 possible S profiles: high CA, low CA, high C low A, high A low C. Rewards: controlling material rewards = money, sweets (undermines A) vs. informative reward. Motivation ↔ learning in a cycle. Basic needs ABC: autonomy/belonging/competence, can work at with S.	- SDT gives framework for talking about facets of motivation - Autonomous → generally better outcomes than controlled - Profiles are context (subject) dependent/ change with time - Give informative not controlling rewards - See pages 246-258 for strategies
4.3 Behavioural economics: how to give people a push in the right direction Psychology + econ = insights in reasoning/decision making. In TFS two thinking systems: 1. Fast (automatic/impulsive) 2. Slow (rational/attentive). Reasoning errors: Anchor effect/Availability heuristic/Bandwagon effect/ Blind-spot effect/Choice-supportive bias/Clustering illusion/ Confirmation bias / Information fallacy/ Ostrich effect/Outcome bias/Overconfidence bias/ Placebo effect /Recency effect/ Survival bias . Ts can help S and parents avoid reasoning errors (e.g. course choices). Nudging can change behaviour (e.g. litter, lateness, effort) but always monitor carefully.	- See book: Thinking Fast and Slow (TFS) Kahneman & Tversky 2 needs more energy/1 can take over. - People hate losing more than we love winning (and marketing plays on this) - Nudging won't work on all students – try different things