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A PSYCHOLOGICAL CRITIQUE OF KNOWLES' ANDRAGOGY AS A THEORY OF LEARNING

ABSTRACT

The theory of andragogy has had considerable purchase amongst adult educators over time. Although it differs in emphasis in its north American and eastern European poles, the theory derives from a psychological distinction between the way that adults and children learn. Defining the theory in the terms of its most influential theorist, Malcolm Knowles, this article develops a critique of andragogy in relation to mainstream theories of learning. Knowles argues adults are psychologically disposed to "immediate", life-orientated learning, whereas children's learning has a "postponed" developmental orientation to the future. However, this particular adult-child distinction has little veracity or credibility when considered against mainstream theories of learning. Rather than a purported cleavage between the learning of adults and children, it seems that Knowles is actually driving at a distinction between non-formal and formal teaching methods, and that this is a better way of thinking about the distinctiveness of adult education than any insights that "andragogy" may have to offer.

Keywords: *andragogy, learning, Malcolm Knowles, schooling, non-formal education*

POMISLEKI O KNOWELSOVI ANDRAGOGIKI KOT TEORIJI UČENJA S PSIHOLOŠKEGA VIDIKA – POVZETEK

Teorija andragogike je imela skozi čas znaten vpliv na izobraževalce odraslih. Čeprav lahko glede na njene poudarke razlikujemo med severnoameriško in vzhodnoevropsko strujo, teorija sama izhaja iz psihološkega razlikovanja med načinom učenja odraslih in otrok. V članku opredelimo teorijo andragogike v okviru razmišljanja Malcolma Knowlesa, njenega najbolj vplivnega teoretika, nato pa kritično razmišljamo o andragogiki v odnosu do splošno vzpostavljenih teorij o učenju. Knowles trdi, da so odrasli psihološko nagnjeni k učenju, ki je »takojšnje«, na življenje osredotočeno učenje, medtem ko je učenje otrok »odloženo«, usmerjeno na prihodnost. Ko takšno razlikovanje primerjamo s splošno sprejetimi teorijami učenja, pa ugotovimo, da pravzaprav ni verodostojno, ampak je Knowlesova razcepitev na učenje odraslih in učenje otrok pravzaprav bližje razlikovanju med neformalnimi in formalnimi učnimi metodami ter da lahko na ta način bolje razmišljamo o tem, kar dela izobraževanje odraslih posebno in edinstveno, kot pa prek kakršnegakoli vpogleda, ki nam ga ponuja »andragogika«.

Ključne besede: *andragogika, učenje, Malcolm Knowles, šolanje, neformalno izobraževanje*

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INTRODUCTION

The influence of andragogy – "the art and science of helping adults learn" (Knowles, 1980, p. 43) – waxes and wanes in Anglophone adult education. However, it has attracted sustained interest in eastern Europe since Savićević's (1991) germinal contributions in the then Yugoslavia (Herasymenko, 2021; Možina, 2011; Poláchová Vašťatková & Dopita, 2021; Reischmann, 2021; Samoilă, 2014; Zmeyov, 2006). There also seems currently to be renewed interest in it in the global South. In both Africa and South-East Asia, expanding cross-national networks advocate applied andragogy as a "real-world" instructional strategy for adult learners in vocational education (Moll, 2023). A recent UNESCO publication posits that the principles of andragogy provide the best possible understanding of the aims, purposes and professional identity of adult education in Africa (Nafukho et al., 2005).

In the United States (US), Malcolm Knowles (1973, 1980) systematised "andragogy" as a learning theory for adult education in the 1960s and 1970s, contrasting it strongly with "pedagogy", by which he meant traditional school learning for children. Loeng (2018, 2023) argues that, in the Anglophone world, the prevailing view of "andragogy" is consistent with Knowles, whereas European theorists tend to interpret it as a theory about the social contexts of adult learning. He explores the ambiguities of the concept at length, arguing that any contrast between andragogy and pedagogy requires careful historical and theoretical analysis. Despite these ambiguities, it appears to me that all conceptions of andragogy rest on a bottom-line conception that adult learning is distinctive and different to children in some way or another. "Andragogues" seem united in the view it has been a mistake to employ "pedagogical methods" in adult education, on the grounds that adults are psychologically disposed to "immediate" learning in their lives, whereas children's learning has a developmental orientation to the future.

This article challenges the very notion that the way that adults and children learn is different, and thereby questions whether the concept of andragogy is useful to us as educators at all. It does so by developing a critique of Knowles' distinction between teaching children (pedagogy) and teaching adults (andragogy) that specifies distinctive states of mind and personality characteristics in each. I demonstrate here that, generally, mainstream theories of learning hold that the way that adults learn is identical to that of children.

The argument proceeds as follows: First, an account is provided of Knowles' defining theory of andragogy. Second, a discussion of the "humanistic psychology revolution" of the 1960s is developed, as the theoretical context within which Knowles formulated his ideas. Next, five pivotal theories of learning – behaviourism, cognitivism, constructivism, socioculturalism and embodiment – are discussed in relation to andragogy. It is suggested that Knowles' theory finds little support in mainstream psychology of learning. The article then offers a reappraisal of Knowles in relation to the psychological correlates of formal and non-formal learning. Finally, the argument is contextualised in

relation to the diverse social contexts in which "andragogy" has appeared, accepting that Knowles' "andragogy" is indeed narrower than European views of the concept. Nonetheless, I conclude that it would be better to demarcate and perhaps revise the concept carefully in adult education.

KNOWLES' THEORY OF ANDRAGOGY

In its earliest formulations, "andragogy" was a psychological concept. It was coined in 1833 by Kapp, a German teacher, to emphasise the inner building of "character" through self-reflection rather than outer, "objective competencies" (Henschke, 2009; Loeng, 2017). In the US, Lindeman (1926) revived the term to emphasise that learning processes and teaching methods, and not content, are important in adult education (Findeisen, 2000): "Too much of learning consists of various substitutions of someone else's experience and knowledge. Psychology is teaching us, however, that we learn what we do […]. Experience is the adult learner's living textbook" (Lindeman, 1926, pp. 9–10). However, this "new" concept did not take hold for decades, and "pedagogy" tended to apply to any teaching/learning situation, including adult education. Lindeman's student, Knowles, was to take up "andragogy" as the name for his systematic approach to adult learning.

Up to the mid-20th century, most Western psychologists and educators assumed that the same general theory of learning and instruction applied to both adults and children. This reflected the grip that positivist philosophy had, in behaviourism and IQ testing for example, on the human sciences. In the 1960s, however, humanistic, cognitivist, and developmental psychologists started to question positivist, one-size-fits-all psychological theories.

In psychotherapy, the "person-centred" psychologist, Carl Rogers, challenged the idea that a therapist treats "patients" by modifying their behaviour using external, often harsh reinforcement technologies. He insisted that his "clients" be treated as adults, responsible for their own behaviour. He advocated a psychotherapy which supported people to take and implement decisions to change their own behaviour. From another perspective, the cognitive developmental psychology of Jean Piaget insisted that children should not be regarded as "little adults" subject to the same experimentally derived laws as applied to adults (Piaget, 1964). Knowles himself put the issue as follows:

> [Skinner's] S-R scheme works fairly well as long as learning is confined to simple kinds of learning. But it encounters severe difficulties when learning is more complex and the learner is more mature […]. [I]t is a better explanation of the quasi-mechanical learning of early childhood than it is of the more complex learning of the adult years for individual differences in response. (Knowles, 1973, p. 145)

For Knowles (1973), behaviourism ignored "the unique importance of the intervening variable", the adult person (p. 145). This was the academic *zeitgeist* he entered in

the 1970s. He described it as "exhilarating. I began to sense what it means to get 'turned on' to learning" (Knowles, 1989, p. 14).

Knowles was strongly influenced by Rogers' (1967, 1969) view that formal education denied self-actualisation: the latter famously suggested that "teaching is a relatively unimportant and vastly overrated activity" (Rogers, 1969, p. 103). Knowles (1968) extended the idea of a responsible, self-directed adult into a criticism of traditional education. He set out to develop a "holistic" theory of adult learning anchored in distinctive motivations and goals of adult learners (p. 386). He adopted the term "andragogy" to sharply distinguish his approach from "pedagogy", "the art and science of teaching children" (Knowles, 1980, p. 43).

Table 1
Knowles' distinction between andragogy and pedagogy

Psychological state	Andragogy	Pedagogy
Self-concept	Adults are self-directed learners, moving towards independence.	Children are dependent beings; teachers are responsible for their learning.
Learning process	Adult learning is generated by past experience, and therefore ideally problem-centred.	Children's learning is based on the instruction of unfamiliar subject content.
Readiness	Adults want specific learning about their work and other roles in society.	Children need generic learning to prepare them for the future.
Orientation	Adults are interested in "just-in-time" learning immediately related to their lives. They learn what they want to learn.	Children's learning is "just-in-case" preparation for an adult future. They learn what society expects them to learn.
Motivation	Adults are internally motivated.	Children are externally motivated.

Note. Contents distilled from Knowles (1968, 1973); adapted from Moll (2023).

Knowles develops various assumptions about adult learner characteristics that are different to child learners, summarised in Table 1. He suggests that the self-concept of adults is driven by "a deep need to be self-directing" (Knowles, 1973, p. 62), whereas the psychological being of children is one of dependency on the teacher. Adults thrive on opportunities provided for them by informal education programmes, workplaces and everyday life activities to shape the course of their own learning. The teacher's role is to engage them towards independent, "objective", *adult* understanding, "rather than to transmit […] knowledge to them and then evaluate their conformity to it" (Knowles, 1973, p. 62).

Knowles' adult learner encounters unfamiliar knowledge, ideas and skills in a learning process generated by a "reservoir" of related previous, personal experience. In contrast, he suggests that children bring minimal experience to the classroom, so pedagogy tends to be based on the instruction of new concepts. Teaching adults should build on their prior

knowledge in activity-based learning, problem-solving, and discussions (Knowles, 1980). Importantly, this process is not superficially about "gimmicks, devices, instruments, tools, and techniques […] for making it more interesting, more relevant, and even more participative" — Knowles (1973) thinks "that we have now moved into a more sophisticated era of thinking about […] what happens to the learners" (p. 41). Note the substantive shift to a psychological ontology in Knowles' thinking here.

The psychological orientation of adults is one of readiness to learn. Knowles (1973) conceives the "50 plus years following childhood and youth as a procession of critical periods […] during which marked changes in social role and meaningful relationships may occur" (p. 147). These are strategic "choice points", entailing "agonizing reappraisal" and the need to learn different things at different periods in life. Andragogy assumes adults have jobs, family responsibilities and social location that require specific, task related know-how for everyday life. Pedagogy, however, emphasises generic knowledge that children absorb continuously as they grow up (Knowles, 1980).

This social location means that the learning orientation of adults is one of immediacy – they seek "just-in-time" knowledge to apply directly to practice in the world around them. Children's learning, in contrast, has "postponed application" – pedagogy is concerned with "just-in-case" knowledge, designed to prepare them for all eventualities in later life. In Knowles' (1980) view, andragogy therefore emphasises problem-based learning – a learner must know from the start what the purpose is of a learning activity or task in relation to the knowledge and skills they require for their workplace or everyday life.

All these characteristics are underpinned by the internal learning motivation of adults, whereas a child's motivation to learn is mostly external (Knowles, 1984, p. 12). Knowles (1973) argues that this motivation has been overlooked in their education: "A differential psychology of the adult years as a unique period in the life span of the individual has long been a period of relative neglect in the productions of the psychological enterprise" (p. 412).

PSYCHOLOGICAL ASPECTS OF THE THEORY OF ANDRAGOGY

There is an extensive critical literature on andragogy (Davenport & Davenport, 1985), much of which draws attention to Knowles' unclear theoretical assumptions about learning. In a systematic literature review on andragogy, Rachal (1994) concluded: "[The] empirical literature runs counter to many of the anecdotal claims for andragogy's superiority over pedagogical methods; in general, the investigations suggest an approximate equivalence between the two approaches on achievement and [learner] satisfaction" (p. 3). What underlies these arguments and empirical findings that andragogy is not all that it claims to be?

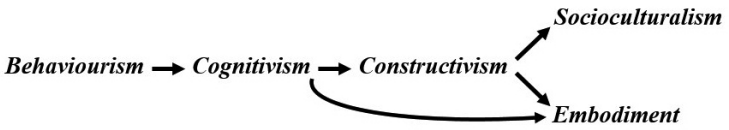
In characterising children's education, Knowles appears to have misunderstood the *zeitgeist* of humanistic psychology in the 1960s and 1970s. While he was clearly influenced by Rogers, it is as if he missed the fact that the latter's critique of education

practices in the US was just as much about how children were taught as it was about adults' learning. Rogers challenged the whole education system, schools and adult education alike. In published dialogues (Rogers et al., 2013), he is clear that, while his psychotherapy is adult-focused, his principled reason for adopting the term "person-centred education" is its equal applicability to adults and children. Elsewhere, he argues that person-centred education makes children more creative and capable problem solvers (Rogers, 1969, p. 97; Rogers, 1980, p. 277). Rogers (1974) even discusses his own childhood to demonstrate that traditional education alienates children from their potentialities.

Simultaneously, other humanistic educators struggled for more non-formal learning opportunities for children. The *deschooling movement*, for example, sought to get rid of schools completely, and replace them with problem solving, contextualised learning experiences across the board for all children (Holt, 1964, 1969; Illich, 1971; Postman & Weingartner, 1969). However, this movement fizzled out, as the realisation dawned that it was impossible to implement its ideals outside of schools. I find it something of a mystery that Knowles, clearly working within the humanistic psychology "revolution", continued to regard children's education in the very traditional way that he did (as represented in the right-hand column of Table 1). In his own extended discussion of psychological theories of learning, Knowles (1973) makes a distinction between "concepts of teaching derived from theories of learning *of animals and children*" (p. 51, my emphasis) and "concepts of teaching derived from theories of learning of adults" (p. 62). For him, the former view teaching as the control of learning by managing rewards, while the latter emerge in the wake of Rogers' intervention. The dichotomy, children/animals vs. adults, is quite a startling expression of Knowles' view.

However, the next section argues that no mainstream psychological theory of learning suggests a clearcut manner in which adults learn differently to children. By "mainstream theory", I mean those overarching theories that have a distinctive "epistemological axis of cohesion": this is a concept put forward by Abbott (2001) to describe a symbolic language or pragmatic orientation that provides coherence to a community of scholars. So in the psychology of learning, for example, *behaviourist* reinforcement theory can be considered to be the axis of cohesion that holds together the theories of not only the archetypal behaviourist B. F. Skinner (1965), but also Thorndike (1932), Gagné (1965), and even the "cognitive behaviourism" of Bandura (1977) – on this, see Knowles (1973, p. 62); the *socio-culturalist* notion of the "social construction of knowledge" is the theoretical axis providing coherence across a range of post-Vygotskian theories such as activity theory (Engeström, 1987), apprenticeship learning (Rogoff, 1990), co-constructionism (Valsiner, 1994), community of practice (CoP) theory (Wenger, 1998), and connectivism in the e-learning terrain (Siemens, 2005). Figure 1 represents the five mainstream theories of learning that I suggest, on this logic, we need to examine in relation to Knowles' ideas (see Moll, 2022 for a fuller account of how these theories emerged historically).

Figure 1
A history of learning theories



Note. From "Computers in the classroom: What informs what we teach the teachers?" by I. Moll, in J. P. Makonye and N. S. Ndlovu (Eds.), Innovations in online teaching and learning: Case studies of teacher educators from South Africa during the COVID-19 era (p. 4), 2022, Aosis.

Two of these theories are often spoken of, at face value, as demonstrating that the way children learn is qualitatively different to that of adults – cognitivism (also known as information-processing theory) and the constructivism of Piaget. I commence with a discussion of these, and then move on to the other theories, none of which seem to have been interpreted as positing a strong adult-child learning dichotomy.

THE LEARNING OF ADULTS AND CHILDREN

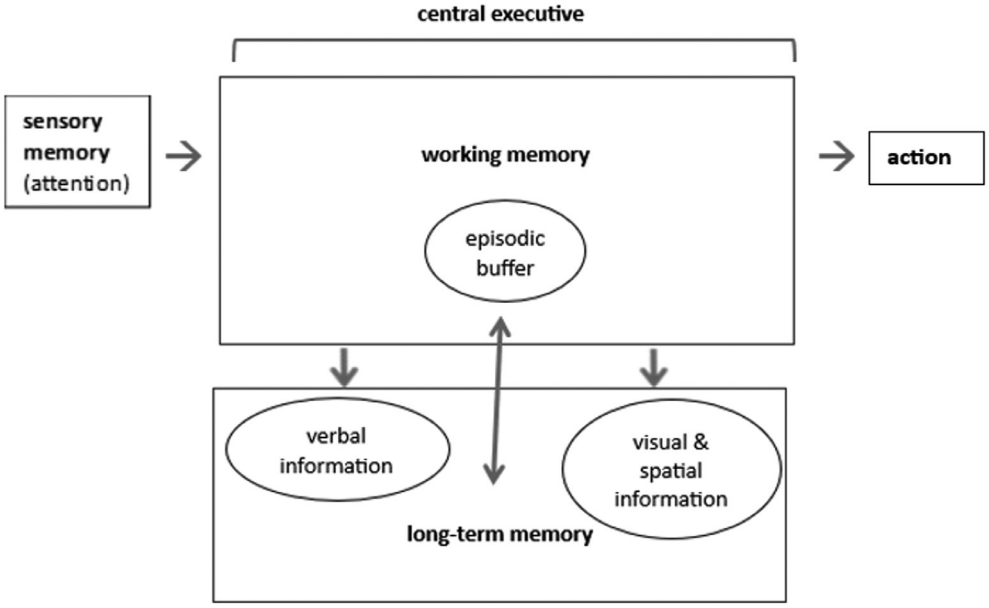
It seems obvious that adults and children are different. Certainly, children differ mentally, neurologically, and physiologically from adults. Cognitively and emotionally, young children seem to be egocentric and believe that everyone sees the world the way they do. Neurologists have established that children's brains are not fully developed – current albeit controversial neuroscientific thinking is that brain development persists until at least age 25. Since brain science was popularised in the 1990s "decade of the brain", the belief that children "absorb information" more quickly than adults is widespread, and this is backed up by scientific research. Cognitivist neuropsychological research has established that, because children's brains have more neuroplasticity, they learn more quickly than adults do (Frank et al., 2022) – as we age, our neural pathways become more fixed. On the other hand, the working memories of children are smaller and less stable (Gathercole et al., 2004, p. 186). However, none of this translates into a claim that *the way that children learn* is different to adults.

For cognitivism, learning is essentially the reception, processing and storage – in short, the memorisation – of information, as represented in Figure 2. For nearly 50 years, there has been broad consensus on the "tripartite model" of the neurology of memory first sketched by Atkinson and Shiffrin (1968) and developed by Baddeley and Hitch (1974). *Working memory* is the core of this model. It is a brain function that operates as a "central executive", coordinating attention, action and higher-order cognitive tasks. It utilises two systems – the "phonological loop" that holds verbal codes, and the "visuospatial sketchpad" that holds visual and spatial codes – to process and store incoming sensory information

in long-term memory. Baddeley (2000) later specified the "episodic buffer", which unites verbal, visual, spatial and other information from long-term memory, in order to produce consciousness and action. We draw this information into working memory (recall it) as we need to when we think and learn.

Working memory refers to the thoughts, or units of information, that we can consciously hold in mind at any point in time. We memorise information in discrete units or in "chunks": a chunk can be thought of as a more efficient representation of a set of items compressed into a single unit. Adult working memory is typically limited neurologically to a maximum capacity of "seven plus-or-minus two" units of information at any given moment, which lasts for only 20 to 30 seconds (Miller, 1956), and only two to four units when it comes to the "chunking" of complex information at any one time (Mathy & Feldman, 2012).

Figure 2
The tripartite model of working memory in adults and children



The crucial point for the purposes of this article is that the core mechanisms and functional interrelationships of the tripartite structure described by the working memory model are in place by six years of age at least. Children and adults activate similar neural networks and chunking capacities (Gathercole et al., 2004; Kibbe & Feigenson, 2016; Ross-Sheehy et al., 2003; Towse et al., 2000). Such differences as there are between adults and children are about capacity – working memory capacity is smaller and time constraints shorter in children – but not about the neurological structures and functions of learning (Cowan et al., 2010; Gathercole et al., 2004; Portrat et al., 2009; Vogan et al., 2016).

Generally, then, cognitivism (cognitive science) shows that the way working memory processes information and stores it in long term memory is identical in adults and children.

The constructivist, Jean Piaget's *genetic epistemology* is often interpreted to be the theory *par excellence* to support the claim that children's learning differs from that of adults. His stages of cognitive development suggest that before age 12, the structure of children's thinking is successively sensorimotor, egocentric, and concrete, but not yet formally abstract (Inhelder & Piaget, 1958). Cognitive structures, for Piaget, are patterns of mental and physical action that spontaneously generate a manner of thinking about the world that is consistent from task to task (Kohlberg, 1966, p. 5). Each has a systemic logic of its own (*structure d'ensemble*) consisting of several interrelated schemas. Building on his vast corpus of research on children, Piaget (1972) went on to establish similarly distinctive structures in adolescent thought in which formal abstract thought consolidates as complex forms of propositional logic. In adult cognition, he described the "INRC group" (Identity-Negation-Reciprocity-Correlation; Piaget, 1957) – the ensemble of sophisticated schemas that characterise fully developed human cognition, later elaborated in studies of "reflecting abstraction" (Piaget, 2001). Other authors have developed notions of a further stage of "post-formal" thought: the most well-known is Riegel's (1973) proposed stage of "dialectical operations" beyond Piaget's formal operations. Others have proposed different notions of a stage of postformal thought (Kuran, 2011; Labouvie-Vief et al., 1995; Sinnott, 1998). Examining all this theorising, it appears at face value that, in Piaget's theory, children and adults might learn in markedly different ways.

However, this interpretation fails to take account of Piaget's distinction between development and learning:

> The development of knowledge is a spontaneous process, tied to the whole process of embryogenesis […] which ends only in adulthood […]. [It] is a process which concerns the totality of the structures of knowledge. Learning presents the opposite case. In general, learning is provoked by situations – [...] a teacher, with respect to some didactic point; or by an external situation. It is provoked, in general, as opposed to spontaneous. (Piaget, 1964, p. 80)

Many interpreters of genetic epistemology conflate the structures of cognition with the mechanisms of learning, that is to say the *figurative* and *operative* aspects of cognition respectively. A good example of this conflation in relation to andragogy is evident in the following statement: "The qualitative state of cognition strictly determines an individual's understanding and interpretation of reality, which of course is directly related to his [*sic*] learning strategies" (Kuran, 2011, p. 46). For all the sophistication of the complex structures of adult thought which Kuran describes with great insight, these structures do not generate learning.

In making the figurative–operative distinction, Piaget was influenced by the contrast between synchronic and diachronic linguistics drawn by de Saussure (1916): the former,

also termed "descriptive linguistics", studies the structure of a language as a fixed or static entity at any given point in time, whereas diachronic linguistics studies changes that occur in a language and the mechanisms that produce them through different periods. "Figurative thinking" in Piaget is a static description of the underlying structures of mind that are reflected in patterns of action produced by a learner at a given point in time (Kuhn, 1972). Piaget's stages describe thinking in this punctuated manner over a lifetime. The cognition of such-and-such a child is concrete, of such-and-such an adult is abstract, and so on. Here, there are indeed adult-child differences.

However, the "figurative" notion does not account for learning. For Piaget, cognitive structures are also "operative", in that they actively coordinate biological maturation with learning that is provoked by environmental and social circumstances[1] (Piaget, 1964). They are inherent biological mechanisms of change that operate to restore equilibrium, and in so doing generate successively more differentiated, elaborated, and integrated structures (Kuhn, 1972, p. 834). As Piaget (1950) puts it, "when one considers the mechanism of this construction, then one recognises that each level is characterised by a further coordination of the elements given before" (p. 81). Several acts of assimilation (isolated parts of operations) are integrated into more comprehensive operational systems.

It is this "operative" thinking that drives learning. Learners have an "impulse of self-regulation" as they act on the world, which Piaget calls *equilibration*. The key point here is that the mechanism of equilibration is identical in all thinking, no matter at what age or stage people are in their lives. Insofar as it has anything to say about learning, the figurative criterion of a cognitive structure produces a static description of behaviour that tends to be a description of the structure of a learning task, hence my claim that it cannot account for learning.

This is why Piaget's theory of stages of development has become less influential in education, and the theory of equilibration more prominent. For both adults and children, learning comes about when operative schemas interpret unfamiliar information, assimilate it into prevailing operative schemas, and then accommodate themselves to incorporate the novel content. A learner becomes increasingly aware of new forms of integrating knowledge that their own actions entail, and their understanding grows. Ultimately, they "internalise their own actions" as new knowledge structures (Piaget, 1964, 1976). There is little in Piaget's theory to support Knowles' attempt to distinguish andragogy from pedagogy as a theory of learning.

With regard to the other mainstream theories indicated above, none rest substantively on a distinction between adult and child learning:

1 In more commonly used theoretical terms, this is a coordination of "prior knowledge" and "experience" resulting from the interaction between organism and environment. This prior knowledge is not "hard-wired" but constructed in successively more complex structures. This is why it is incorrect to classify Piaget as a "cognitivist", which is a frequent mistake that many commentators make.

- Lev Vygotsky, the other major generative theorist of constructivism, views learning as the psychological internalisation of the knowledge structure of joint activity between a learner and a "more knowledgeable other" in relation to a particular task. This takes place within a "zone of proximal development" (ZPD), which is "the distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem-solving under adult guidance, or in collaboration with more capable peers" (Vygotsky, 1978, p. 86). This definition makes it clear that, while mediation of knowledge to children by parents and teachers (adults) is significant, children frequently mediate unfamiliar knowledge and skills to each other, and can also mediate unfamiliar knowledge to adults. Vygotsky perceives no sharp divide between the manner of learning in adults and children. For constructivism overall, the mechanisms of equilibration and mediation characterise all learning (Moll, 2022).
- Behaviourism, even in its broader "cognitive" sense, considers learning to be governed by *universal* laws of behaviour connecting stimuli and responses (S-R) that are applicable to all organisms, whether children or adults (or pigeons for that matter; Bandura, 1977, p. 22; Skinner, 1965, p. 429).
- Phenomenology, from the mid-20th century, viewed learning as arising in the sense we have of inhabiting our physical bodies: we learn through direct bodily engagement with the world, from our state of *being-in-the-world* (Merleau-Ponty, 1962). This understanding of learning has been extended in embodied linguistics (Lakoff & Johnson, 1999) and embodied cognition theory (Clark, 2008), in emphasising the situatedness of the body, and hence the embodied mind, in the physical and cultural world. In the emergence of thinking and learning, there are no ruptures between brain, body, and world. Furthermore, embodied cognition theory proposes that adults and children think and learn in essentially the same way by apprehending and using their bodies. Just as much as adults use gesture and the experience of their bodies situated in sociocultural space to learn and to communicate with each other, so children do in areas such as language learning (Toumpaniari et al., 2015) and mathematics problem solving (Cook & Goldin-Meadow, 2006; Ruiter et al., 2015).
- Socioculturalism, as indicated earlier, contends that learners are situated in CoPs and social activity systems that constitute their knowledge via apprenticeship or similar learning processes. Learning "occurs through interested participation with other learners" (Rogoff et al., 2001). Most research in this terrain demonstrates how adult learners move from "legitimate peripheral participation" to become experienced "old timers" in a CoP (Nicolini et al., 2022; Wenger, 1998). However, children also constitute CoPs in which the mechanisms of sociocultural learning are essentially the same. Witness, for example, a fascinating study of how three- and four-year-old Pakistani immigrant children constitute such communities in establishing their ethnic identity and succeeding in a UK preschool (Barron, 2007). There may be differences in the way adults and children are regulated socially, but his does not mean that they learn differently.

Reviewing mainstream learning theory in psychology today, there seems to be little evidence to warrant a strong distinction between the learning of adults and children. All the theories discussed above are theories of adult learning, but they are equally theories of child learning. As a theory of learning in educational contexts, andragogy does not take our understanding very far.

FORMAL VS. NON-FORMAL LEARNING

Over the course of his writings Knowles himself seems to have realised that the strong distinction between adult and child learning is untenable. Early on, in *The Modern Practice of Adult Education: Andragogy versus Pedagogy* (1970), he tried to theorise the difference by drawing out the Greek etymology of "andragogy" and "pedagogy". The former derives from *ἀνδρας* (*andras*), meaning "man", and *ἀγωγός* (*agogos*), meaning "*leader*". The latter comes from *παιδί* (*paide*), meaning "child", and *agogos*. So originally, andragogy denotes "leading a man" and pedagogy denotes "leading a child". However, within a few years, Knowles had started to question these meanings:

> I am not talking about a clear-cut differentiation between children and adults as learners. Rather, I am differentiating between the assumptions about learners that have traditionally been made by those who practice pedagogy in contrast to the assumptions made in andragogy. I believe that the assumptions of andragogy apply to children and youth as they mature, and that they, too, will come to be taught more and more andragogically. (Knowles, 1973, p. 43)

Yet, in the same text, he goes back to Greek etymology: "to speak of 'the pedagogy of adult education' is a contradiction in terms" (Knowles, 1973, p. 4). He continues to hold onto the transformation of teaching and learning that he envisages for adult education: "haven't most adults including people in professional training been taught as if they were children?" (p. 41). However, by the time he published the second edition of *The Modern Practice of Adult Education* (1980), the subtitle had changed to *From Pedagogy to Andragogy*, and Knowles was arguing that the two concepts were parallel models of learning:

> [They are] probably most useful when seen not as dichotomous but rather as two ends of a spectrum with a realistic assumption in a given situation falling in between the two ends […]. I am at the point now of seeing that andragogy is simply another model of assumptions about learners to be used alongside the pedagogical model of assumptions. (Knowles, 1980, p. 43)

Later, Knowles (1984) continued to distance himself further from a sharp distinction between pedagogy and andragogy (p. 6) and from "personal ownership of the andragogical model [...]. I did not coin it; I stole it from the Europeans" (p. xvi).

Knowles' growing ambivalence, I suggest, is because his primary concern as an adult educator was not so much with children's learning, as with the inadequate or non-existent *non-formal learning* opportunities provided by the education system at large for adult learners to meet their contextualised, everyday needs. A close reading of the texts indicated above show that Knowles' thinking started with a strong view that andragogy should completely replace pedagogy (that is, institutionalised formal education as he saw it), but that he softened his position towards a recognition that both formal and non-formal "approaches" in education are necessary and complement each other. Given that Knowles positioned his theory in the psychological domain, and considering the psychological theories of learning discussed above, it seems clear that he was mistaken in wanting to think through the shortcomings of adult education in terms of a cleavage between adult and child learning. It was actually formal versus non-formal learning for adults that interested him.

One of the psychological theories of learning referred to earlier, that of Vygotsky, helps us to understand that the main distinction Knowles wants to make has little to do with adult-child differences. Vygotsky drew a distinction between *spontaneous* and *scientific* concepts, as represented in Table 2. By the former, he meant the thinking and learning of everyday, contextualised life situations; the latter refers to the specific, decontextualised forms of thinking and learning that characterise formal educational settings (schools, universities, religious academies and the like) – Wertsch (1991) refers to these as "text-based realities".

Table 2
Vygotsky's distinction between spontaneous and scientific (systematised) concepts

	Spontaneous Concepts	Systematised Concepts
Where acquired	In the course of everyday activities	In schools and other formal learning contexts
How acquired	Spontaneously – in action	Via instruction – in lessons
Motive	Activity – the learner and others engaged in mutual activity	Development – a teacher deliberately intends to develop a learner's knowledge
Nature	Unsystematic – learned by trial and error in context	Systematic – learned by attention to salient features in a decontextualised setting
Awareness	Unconscious – we can do it but cannot say how	Conscious – we exercise voluntary attention
Direction of development	Upwards – towards true concepts	Downwards – towards true concepts

Note. Contents distilled from Vygotsky (1934b); adapted from Slonimsky and Moll (1993).

The important point is that Knowles sought to free adult education from actually existing, stultifying formal education practices by looking to (in Vygotsky's terms) the spontaneous

formation of concepts related to everyday life and work that is made possible by non-formal learning. Evidently, the main distinction Knowles wants to make is not one about adult-child psychological differences.

Thinking about, learning and practising systematised and spontaneous knowledge takes place in different modes of learning:

- Formal learning characterises school subjects and other disciplinary studies, like university courses, or scriptural study in a religious academy. Also known as the acquisition of *propositional knowledge,* it is decontextualised learning requiring recognition of the salient features of *systematised* tasks.
- Non-formal learning, also known as the acquisition of *procedural knowledge*, takes place in the practical contexts of work and everyday life. It is contextualised, in that it emerges from shared, pragmatic, *spontaneous* learning activity (Vygotsky, 1934b).

Formal and non-formal learning do not exclude each other and always exist to some degree or another in a relationship of mutual concept formation. The last row in Table 2 summarises Vygotsky's (1931, 1934a) dialectical view that (i) spontaneous learning is "syncretic", arising in subjective images, accidental objective connections and "pseudoconcepts", which in mediated encounters with systematised knowledge can produce abstractions and generalisations to other situations, while (ii) systematised learning consists in a "system of judgments" that can generate an "ordering [of] the perceived world with the help of the network of logical relations cast upon it" (Vygotsky, 1931, p. 48). In some contexts, for example, technical and vocational education and training (TVET), procedural learning and propositional learning must be strongly emphasised in relation to each other; in an algebra classroom, propositional learning will predominate; in learning to catch and debone a fish, procedural apprenticeship learning will take up the most time. "Andragogy" in Knowles' terms does not add much theoretical value, once we understand that the approach it describes has nothing to do with whether the learner is an adult or a child.

Nowadays, like it or not, in the study of education in England and the US, the term *pedagogy* has become the "term of art" referring to this engagement with the relationship between propositional and procedural knowledge in teaching and learning. A term of art is "a word or phrase that has a precise, specialized meaning within a particular field or profession" (Oxford Languages, 2022). Most prominent theorists in this terrain use the term "pedagogy" in their writings, and they do not mean "children only" – Paulo Freire (1970), Lee Shulman (1986), Johan Muller (2000), Basil Bernstein (2003), Jerome Bruner (2006) and bell hooks (2013) are but a few prominent examples. The most influential theoretical contributor to adult education, Freire, titled his pivotal books *Pedagogy of the Oppressed* (about non-formal, community-based political education; 1970) and *Pedagogy of the City* (about primary, secondary and tertiary formal education institutions; 1993). Adult educators quite reasonably talk about "pedagogy" in their practices. In education, "pedagogy" has a much more expansive meaning than Knowles believed that it had.

It also seems that "pedagogy" in continental and eastern European traditions has become a similar term of art not particularly circumscribed by the "teaching and learning of children". Instead, the concept has emerged from much longer engagement with education as a "phenomenon", losing any particular attachment to the "child", instead meaning *the individual* in interaction with culture and society (Biesta, 2014).

CONCLUSION: "ANDRAGOGY" IN SOCIAL CONTEXT

Both Loeng (2023) and Reischmann (2017) urge caution in the way we interpret "andragogy" and encourage scepticism about the dominant individualist interpretation associated with Knowles[2]. For the former, in the European context, "pedagogy is much more than traditional pedagogy, and andragogy is much more than Knowles's andragogy" (Loeng, 2023, p. 39). Reischmann's (2017) view is that adult learning should not be bounded by institutional learning programmes, but has "many more motivators, supporters, testers, threads, reinforcement, control, informators, criticizers, training situations, and correctors that are scattered through different life situations" (p. 45). So, for both commentators, andragogy denotes learning beyond formal education, in all senses of the term – outside schooling, past schooling, unconstrained by schooling, wider than schooling. Reischmann's insightful concept is "lifewide learning", not simply "lifelong learning", which has tended to be institutionalised all over the world. However, to the extent that both still seem to want to retain the term "andragogy" to describe this social and cultural imperative in *adult education*, they may be missing the explanatory power that Vygotsky's concept of spontaneous concepts helps us unlock in psychological terms.

My argument in this article, however, is that Knowles' concept of "andragogy", in its ongoing connotation that the fundamental learning processes of adults differ from those that are appropriate for children, is a formulation of the term that we could better do without. Knowles, in seeking to challenge the inability of the formal education system to make available to adults the flexible, informal learning that would meet their continually changing needs, unfortunately equated this formal education system with "pedagogy" for children. I have suggested here that this error arises from his erroneous theory of adult learning, which stands on unstable conceptual ground in relation to psychological theories of learning in general. It does not help to shift attention away from the psychological to the social and cultural dimensions of adult learning, because Knowles' theory (and indeed earlier versions of "andragogy") are avowedly psychological.

Once we recognise this, a reappraisal of Knowles as being concerned with the psychological correlates of formal and non-formal learning becomes evident. The article has suggested that Vygotsky's distinction between spontaneous and scientific concepts provides a

2 There is a strong case that Knowles' theory of andragogy is politically and culturally oppressive toward people of colour, women and other marginalised groups, because it is seated in the individualist, white, male, middle-class ideologies of mid-20th century US (Moll, 2023). The literal meaning of "andragogy" reminds us of this tendency in Knowles.

better conceptual frame to understand and work with this than the notion of andragogy does. It aligns our thinking on the teaching and learning of adults much more closely than either Knowles' or indeed the European concept of andragogy is able to do. To realise Reischmann's "lifewide learning", I suggest that the notion of andragogy appears to have limited veracity as a theory of learning in adult education.

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