Classroom of the Apes: Is Teaching Monkey Business?

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Abstract
Between 1973 and 2000, social scientists conducted one of the most significant, innovative and challenging programmes in the history of linguistic and educational research. 'Project Nim' investigated both the interaction between nature and nurture and attempted to bring human level gestural communication to a chimpanzee called 'Nim'. The study offered some of the most important insights into our understanding of language and cognition and what it means to be human, and represents a landmark in our thinking about teaching and learning, and education itself.

Here, the authors contend that essential lessons from the experiment have been overlooked and risk being forgotten. This article revisits the study, exploring some of the issues it raises, and attempts to site what we learnt from Nim in the context of modern teaching practice. Through this re-examination we intend to provoke thinking not only about 'Project Nim', but perhaps also about other lost lessons in education. We conclude by reflecting on the importance of remembering the lessons we learnt when trying to teach Nim, and how they can enhance our practice as teachers for all learners.

Keywords: Teaching, Pedagogy; Learning; Language; Communication; Gestural; Non-verbal; Evolution

For many, teacher training can be a hard slog, punctuated by the antics of 'that kid in year 12', and the hours and hours of planning lessons that can easily be lost on a disruptive class. We of course reference the great sacrifice, personal challenge, and subject matter of teaching as characteristic features of this demanding profession. Yet, despite the reflective nature of teachers and quality of teacher training, the subject has a rich research base and it is notoriously challenging to put theory into practice, especially educational theory (Jarvis, 2006). In spite of the often flaunted criticism 'those that can't do, teach', teachers cannot escape 'doing teaching' which can be the harder of the two. The fundamental principles of teaching, which are well evidenced by this research base and support the diverse attitudes and approaches to this unique profession, are therefore essential.

Here, the authors introduce these principles and a ground-breaking study which made a remarkable contribution to the 'departments' of science and education. The distinctions between humans and our closest evolutionary relatives and the science of language evolution will firstly be discussed, to provide context to the study and this article. The educational lessons they demonstrate and best teaching practice will then be elaborated upon. Finally, we conclude by reflecting on our ability to surpass expectations and our responsibility for ensuring the future of our uniquely successful species.

Teaching is not just about having exceptional skills, but how you choose to use them in practice, and use the various contributions from academics who have researched the teaching and learning interaction. For learners to flourish, charisma and classroom gimmicks are not enough for the best of them, let alone those who are seemingly impossible to teach. A diversity of attitudes and techniques can however provide valuable support when teaching any audience. But what about those learners who might be considered 'unteachable'… can what we know, or think we know, give us hope that we can surmount the insurmountable? The researchers that worked tirelessly on Project Nim believed that it could be and reinforced the significance of the fundamental principles of teaching.

Attempting to teach a chimpanzee the apparently inaccessible sophistication of a human gestural communication system was widely considered unachievable, given the physical and neurological distinctions between humans and our closest evolutionary relatives. Hauser *et al.* (2012) suggest that the difference between the faculty mediating human communication and other living creatures is remarkable. It is broadly accepted that non-human primates are adept social navigators but humans have gone even further, evolving what is known as 'ostensive communication'. This adaptation, often linked to the notion

of 'theory of mind', has been investigated by both linguistic and educational researchers (Geary & Berch, 2015). It is considered to have evolved to an extent that allows humans to reach new levels of social navigation, by enabling both the mental manipulation of our audience and interpretation of others' mental states (Origgi & Sperber, 2000; Scott-Phillips, 2014).

In terms of communication, humans were then capable of developing languages to allow ostensive communication to be used more precisely (Scott-Phillips, 2014). The ability to build sophisticated communication systems was a launch pad for the unprecedented success of our species, by facilitating the accumulation of knowledge through socially exchanged thoughts, ideas and experiences (Fitch *et al*., 2010). The sophisticated nature of human communication systems and the 'cumulative cultural evolution' of human language makes our species as exceptional as human language in the natural world (Scott-Phillips, 2010; Smith & Kirby, 2008). That ostensive communication could be so fundamental not just in terms of communication, but so too of cognition and, ultimately, society and even human progress itself, seemed beyond imagination only decades ago.

Emerging theories about the physical and neurological distinctions between humans and our evolutionary relatives, and the consequences for our understanding of communication, caused so much excitement that in the 1970s researchers from the humanities, the social sciences and the sciences decided it was time to put them to the test (Hess, 2008). The unsuspecting student, Nim Chimpsky (a humorous allusion to Noam Chomsky, the preeminent linguist and semiologist), was 'enrolled' in a language experiment and 'programme of education' at Columbia University that was to last almost three decades, dubbed 'Project Nim'. The study primarily aimed to discover whether chimpanzees could create sentences using grammar, if taught sign language and nurtured in a human environment, to disprove that language was not unique to humans. It nevertheless equally demonstrated the importance of the essential principles that should support all teaching practice. While scientists focused on attempting to inhibit his nature and change his nurture, Nim had, unwittingly, become a pathfinder as a learner, on what remains today (perhaps), the most extraordinary curriculum ever conceived.

As teachers, we face a huge diversity of learners, from vastly different cultures and, increasingly, of those for whom the language of tuition may not be their mother tongue. It is not hard to see that the challenges these circumstances create, pale into insignificance in the face of a student for whom the term 'mother tongue' is something that stretches the definition to breaking point, and for whom the notion 'culture' is, at best, equivocal. But this was not to deter an ambitious group of researchers from trying who, putting their hopes before wisdom and grace, pursued the dream of their student's success for the rest of their careers and, in some cases, their lives.

While from the outside, Project Nim may have appeared hopeless, the apparent futility of the researchers' efforts was not so easily dismissed by linguistic and educational theory. Whether spoken or signed, language is a gestural system (Corballis, 2009), and while Nim would never utter 'mama' let alone talk, the absolute belief that Nim could meaningfully sign gave legitimacy to the researchers' aspirations that Nim would one day communicate using grammar to construct sentences. In spite of the many biological, social and cognitive distinctions this was it - raised as a human being, with considerable resources backing the study, and nine or so thousand years of our own civilisation behind us, the onus was on Nim to prove he was 'unteachable'.

So what are the educational lessons that we can draw from Project Nim? As has already been mentioned, Project Nim became a study that came to centre on the teacher and not the learner. As such, two key lessons emerge. First, that the focus on the learner-teacher relationship was misplaced. That it turned into something that was not about Nim but about what we could do 'to' Nim. Second, that the main lessons that we have learnt are, necessarily, more about the attitudes and perseverance of the teachers themselves. For us, there are five main lessons of this kind that need highlighting.

1. Determination in the face of adversity – knowing when to give up and when to not
2. Understanding our learners, their potential and their limitations – and who they are
3. The power of reflection – as individuals, and together
4. What it means to be a professional – and what it means to be a teacher
5. The value and application of the evidence-base – and its meaningfulness

Most people would be hard pushed to find any account in the educational literature, in anecdote or even in folklore that could even hope to compare with the dedication and determination of the educators in Project Nim. There was continual need to respond to unexpected obstacles faced in the course of the study. These difficulties were met and overcome with tireless dedication to the achievement of what they set out. With such a show of commitment, the question is rather: at what point did perseverance become perseveration? As educators, we need to continuously reflect on how our students are responding to what we are doing, what can be done and what cannot. Like Nim, a chimpanzee living in a human world, they are negotiating an unfamiliar environment, the adult world. We cannot expect them to fully understand this environment with such little experience and it is our challenge as teachers to compensate. We must make every effort to understand their world and accept the consequences of our differences in order to connect, engage, and inspire.

We cannot hide and should not spurn the rhetoric of 'learner-focus', or 'reflective practice', as so often it is presented as jargon. Neither can we pretend that any of what we do goes anywhere without determination and commitment. Small, incremental developments in the evidence base of teaching and learning can be overshadowed by grand theories and techniques. With Nim, those lessons cannot hide. Just as we must never forget our accountability and responsibility as teachers for our learners' futures, we must ensure, if we are to be held to account, that we never lose sight of or set aside a commitment to these principles. At the heart of it, the success - first in our teaching, and then of our learners, and (ultimately) for the future of our species - depends on what teachers do and do not, and how what they do is done. It was Newton who said he only saw so far because he stood on the shoulders of giants and, for us, professional practice begins with these foundations.

Project Nim documented an extraordinary journey through Human Society and, through attempting to make an animal human, we learnt about the true nature of our closest relative and, to a greatly underestimated degree, ourselves. It has been argued that the researchers were denying the inherent 'chimpness' of Nim and focusing more on our species and their own intentions to make Nim learn. Is this any less than the charges levied against teachers in our profession? For us, despite many admiral principles and intentions, the apparently uncontrollable limitations, great sacrifice and personal challenge, which characterise this demanding profession too often take centre stage. The focus should, of course, be on the learner and the many futures that teachers are responsible for.

The purpose of Project Nim was not to turn a chimp into a functioning member of human society. Rather, the intention was to find out whether we could teach Nim skills, like gestural communication, that were widely considered the preserve of humans. At the same time, the sophistication of the communicative exchanges achieved between Nim and the researchers surpassed all expectations and broadened our understanding of what were vastly underestimated capabilities of chimpanzees. Nim serves as an extreme example and reminder that for all the knowledge of our subject and all the skill we apply in our work, ultimately, knowing who our learners are, accepting our differences and adopting an approach focused on them, offers our students the best opportunity for success.

And so we come full circle, to the ancient profession of teaching, and its bearing the future of what is our uniquely successful species. The conveying of knowledge, skills, attitudes and behaviours is central in the way we attempt to shape the future through directing the force of cumulative cultural evolution. Through individual reflection and sharing of perspectives and experiences, Nim served not only to teach us about language, but to teach us about teaching and learning itself. We have, what is now clearer than before this groundbreaking study, such unprecedented cognitive dexterity, granted to us by our comparably superior biological and evolutionary history, and a force that needs to be channeled towards the enlightenment and education of our current and future generations. For us, we have a moral duty, as a species, to ensure we make best use of our valuable predispositions.

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