

A Love triangle: Changes in our knowledge world, pedagogy and subject discipline

'n Liefdesdriehoek: Veranderinge in ons kenniswêreld, pedagogie en vakdissipline

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Abstract

In this presentation I investigate how three dimensions of teaching can be connected in order to bring about a coherent theoretical underpinning for teaching in a specific subject discipline. The three dimensions which I shall focus on include the student's knowledge world, pedagogy and the subject discipline. I focus in particular on changes in our, as well as the student's knowledge world, which are mainly caused by the digital revolution and investigate ways in which these changes could be aligned with the other two dimensions in order to create a meaningful learning strategy.

In hierdie aanbieding stel ek ondersoek in na hoe drie dimensies van onderrig met mekaar in verband gebring kan word om 'n koherente teoretiese onderbou vir onderrig binne 'n bepaalde vakgebied te skep. Die drie dimensies waarna ek kyk is die student se kenniswêreld, pedagogie en die vakdissipline. Hierdie is nie 'n "beste praktyk" aanbieding nie, dit is 'n teoretiese een. My premisse is dat goeie en meer bepaald effektiewe onderrig moet rus op 'n behoorlik belynde teoretiese grondslag wat gevolglik die ontwerp van bepaalde onderrigpraktyke inspireer.

However, this presentation is also not one on educational theory *per se*. My concern is not exclusively, or even primarily, one of theory in education. I am not an educational theorist, I am a teacher of law. My focus is on developing an understanding of the relationship between what I consider to be three basic dimensions of teaching, viz. the student, the teacher and the discipline, in guiding my own practices in teaching law students. But before you all get up and leave in hearing that this will be about teaching law, let me put you at ease that I shall also not be focusing in this presentation on law *per se* or even teaching law. My presentation will be more generic in nature, although I shall have to refer briefly to the only discipline that I really know anything about, viz. law, in explaining how I see disciplinary theory as informing the relationship that I talk about and what I have called elsewhere "transformative legal education",¹ by which I mean the application of the framework that I will be talking about to legal education in particular.

My oogmerke in hierdie aanbieding is dus tweërlei. In die eerste plek wil ek wys hoe ek dink die drie dimensies van onderrig sinvol in verband met mekaar gebring kan word in 'n verhouding wat ek meen essensieel is vir 'n grondige onderrigfilosofie in 'n bepaalde vakgebied. Ek wil in besonder aantoon wat

¹ G Quinot "Transformative Legal Education" (2012) 129 *South African Law Journal* (forthcoming).

die implikasies is van 'n verhoudingsbeskouing vir die individuele dimensies van onderrig. In besonder sal ek argumenteer dat so 'n siening bepaalde implikasies behoort te hê vir hoe ons ons vakdissiplines beskou en dat dit klem plaas op wat in my mening 'n belangrike selfbeskouing of identiteitsvorming behoort te wees by 'n instelling soos hierdie en wat in kort beskryf kan word as die siening van akademië as doserende navorsers eerder as bloot navorsers. In die tweede plek is my oogmerk om te wys op 'n aantal kern-implikasies vir hoe ons onderrig benader in elk van die drie dimensies afsonderlik. In hierdie tweede oogmerk sal ek veral fokus op veranderinge in die kenniswêreld rondom ons en hoe dit ons studente raak en ek sal gevolglik die meeste tyd aan hierdie dimensie wy.

Let us thus start with the first dimension in this triangular relationship: that of students. In this first dimension it is particularly the changes in our students' knowledge world that interest me and that I think hold profound implications for the way in which we approach teaching.

While I think that one should be careful not to jump to conclusions about the traits and the demands on education of a new generation of students currently entering higher education, variously called the digital, Net or Google generation or in Marc Prensky's evocative words "digital natives",² there does seem to be rapidly growing consensus across a wide field of commentators that some rather big changes in dealing with knowledge are afoot. Leading scholars from diverse backgrounds, such as Oxford neuroscientist Baroness Susan Greenfield³ and director of the library of Alexandria Prof Ismail Serageldin,⁴ tell us that the impact of the digital revolution on our society and in particular on the way we engage with knowledge is not simply a quantitative change but a qualitative one. It is a change that touches the very nature of our perception of knowledge. In her lecture here on our campus Greenfield talked of a "mind change" as the cognitive equivalent of climate change, and Serageldin argues:

"We are on the cusp of a profound transformation of how knowledge is structured, accessed, manipulated and understood, how it is added to, and how it is displayed and communicated, that is the most profound transformation in the history of humanity since the invention of writing."⁵

The differences between engaging with information in printed form and in digital form indeed seem profound. Looking at these differences and their impact on our knowledge experiences, it may not be an overstatement to say that the hold of Gutenberg on our intellectual endeavours has been broken by the

² M Prensky "Digital Natives, Digital Immigrants" (2001) 9:5 *On the Horizon* 1. See S Bennett, K Maton & L Kervin "The 'Digital Natives' Debate: A Critical Review of the Evidence" (2008) 39:5 *British Journal of Educational Technology* 775; OECD/CERI "New Millennium Learners: Initial Findings on the Effects of Digital Technologies on School-age Learners" (2008) <http://www.oecd.org/dataoecd/39/51/40554230.pdf> (accessed 17-08-2011) on the lack of empirical studies investigating the implications of digital technology on education.

³ S Greenfield "The Brain of the 21st Century: From Basic Neuroscience to Social Policy" *Fifth Public STIAS Lecture* 2011, 08-06-2011.

⁴ I Serageldin "The Shape of Tomorrow – Part One: The Seven Pillars of the New Knowledge Revolution" (10-10-2010) <http://www.serageldin.com/SpeechDetail.aspx?SID=2Y6A%2ftjniPIL22nT39rblQ%3d%3d> (accessed 12-08-2011).

⁵ Serageldin (supra).

advent of digital technologies.⁶ The dominance of the printed word over our knowledge construction following Gutenberg's invention of the letterpress led to a "literary and linear" paradigm of knowledge.⁷ This paradigm has shaped the way we conceive of knowledge and physically how our brains engage with the construction of knowledge.

Digital technologies, and in particular the Internet, offer us a very different paradigm of knowledge. Hyperlinks and search functions allow us to zoom in directly on relevant bits of information within a text, radically changing our mode and speed of access. These functions also allow us to directly experience the links between different texts. A direct and immediate engagement with the relationship between distinct bits of information becomes possible.

But the format of digital information, particularly on the Net, is also now far removed from printed text. A typical web page contains many different areas of distinct but mostly related fragments of information. At the same time, the PC allows us to simultaneously juggle between different information sources fulfilling different functions and, significantly, to integrate these distinct nodes of information.⁸ The conventional form of information is also no longer restricted to text, and the interaction among text, graphics, sound and video has become commonplace.⁹ It is also not only the way we access information that is radically different in electronic form, but also the way we create information. Electronic texts are not static¹⁰ and thus always have a "provisional nature".¹¹ But perhaps one of the most significant differences between engaging with knowledge in print and digital forms is that in the electronic paradigm the engagement becomes "bidirectional".¹² The distinction between reader and writer – active and passive users – is increasingly breaking down, with users always being active participants.

Hierdie voorbeelde van die verskille in kennisomgang tussen digitale teks en tradisionele geskrewe woord dui op 'n verskuiwing in ons konseptualisering van kennis van liniêr na 'n relasionele of netwerk paradigma. Die vraag is: hoe beïnvloed dit ons onderrigpraktyk?

Daar is nou vele studies wat daarop dui dat ons nie bloot hier te make het met afwykende akademiese vaardighede of gebrekkige akademiese geletterdheid nie. Een onlangse studie toon byvoorbeeld aan dat mense se breinpatrone inderdaad verander as gevolg van Internet-gebruik en dat die omgaan met elektroniese teks, vernameam op die Internet, ander areas van die brein inspan en gevolglik ontwikkel in vergelyking met blootstelling aan gedrukte teks.¹³

⁶ N Carr *The Shallows* (2010) 77, 104.

⁷ Carr (supra) 10, 76.

⁸ See University College London "Information Behavior of the Researcher of the Future" (11-01-2008) www.ucl.ac.uk/slais/research/ciber/downloads/ggexecutive.pdf (accessed 15-08-2011) 8.

⁹ Serageldin (supra).

¹⁰ Serageldin (supra).

¹¹ Carr (supra) 107; Serageldin (supra).

¹² Carr (supra) 85.

¹³ Carr (supra) 120 – 121.

Terwyl niemand van ons kan ontsnap van die digitale revolusie nie is daar nou heelwat studies wat aandui dat die impak van hierdie verskuiwings nie net kwantitatief groter is op 'n jonger generasie nie, maar dat dit ook 'n kwalitatiewe impak op hulle het.¹⁴ Kortom: hierdie jonger generasie se moedertaal is digitaal. Prensky se metafoor van die “digital native” vang hierdie realiteit vas deur daarop te dui dat die digitale paradigma van kennis natuurlik is vir jongmense. In teenstelling is dit nie natuurlik vir die res van ons wat beskryf kan word as digitale immigrante nie. Ons mag dalk in hierdie nuwe digitale landskap leef, maar ons moedertaal bly dié van die ou liniêre kenniswêreld van gedrukte teks.

From an educational perspective the real difficulty thus lies in the realisation that “[o]ur students are no longer ‘little versions of us’”.¹⁵ This makes it particularly difficult for us to develop an understanding of our students’ knowledge base and their experiences of knowledge construction and engagement for effective teaching. How can we design effective learning opportunities for students that may have a radically different conception of knowledge? But the problem doesn’t end there. In a country such as South Africa we cannot expect that our students will share uniform levels of digital immersion.¹⁶ As we strive to increasingly diversify our student body, we should expect that our students’ prior knowledge experiences, digital and non-digital, will vary significantly. Given the fundamental nature of the shift from print to digital engagements with information, these differences in knowledge bases are again not simply a matter of degree but indeed of paradigm. This means that we are dealing with a body of students who do not only exhibit varying degrees of mastery of particular skills sets, but who also may not even share the same basic conception of knowledge. This realisation poses enormous challenges in designing learning experiences. The dangers of a pedagogy that assumes particular knowledge traits loom large here. We run the risk of either alienating our students by adopting an approach that seems foreign to them, given their radically different paradigm of knowledge engagement, or excluding students from learning by wrongly assuming that they are all digital natives.¹⁷ In most of our classes at present, I would suggest that we run both these risks.

But these challenges also bring opportunities. The uneven changes in students’ knowledge world both among themselves and compared to lecturers bring the importance of diversity in teaching to the fore. It makes teaching in a differentiated manner an imperative. It also reinforces the importance of horizontal learning in addition to vertical learning, so that students can learn from each other to enhance learning experiences that may otherwise fail to effectively engage them. A vastly different role for the teacher becomes essential. It is no longer possible for us digital immigrants to be the sole authoritative figures in class given that at least some of our students’ fluency in a new knowledge paradigm far surpasses our own. This forces us into a teaching style that actively co-opts our students and makes them active partners in mediating learning experiences. And finally, these changes in

¹⁴ University College London (supra); OECD/CERI (supra); M Ito et al *Living and Learning with New Media: Summary of Findings from the Digital Youth Project* (2008).

¹⁵ M Prensky “Listen to the Natives” (December 2005/January 2006) *Educational Leadership* 9.

¹⁶ A recent study even warned against the dangers of an assumption of universal access in OECD countries, OECD/CERI (supra).

¹⁷ These dangers are amplified by studies showing that differentiation in digital skills often follow socio-economic status and gender lines. OECD/CERI (supra) 4–6.

knowledge worlds bring home the need to adopt a pedagogy that does not insist on a single correct way of doing things.

This brings me to the second partner in my love triangle – the teacher, or more accurately, the act of teaching. As I have argued, the changes in the knowledge world of our students necessitate a pedagogy with particular traits if we are to effectively create learning opportunities for them.

Addisioneel speel die insig dat ons studente nie meer klein weergawes van ons is nie 'n bepaalde rol in wat effektiewe onderrig tans van ons vereis. Dit beteken dat ons nie meer kan terugval op die verstekbenadering tot onderrig, naamlik “to do unto them as was done unto us”, met ander woorde om te doseer soos ons gedoseer is nie. Hierdie realiteite dwing ons, dit is, alle dosente, om aktief om te gaan met pedagogie, met kennis rondom onderrigbenaderings. Daarsonder is dit gewoon onmoontlik in ons huidige realiteit om ons studente te bereik.

Wanneer ons dan ondersoek instel na pedagogie teen die agtergrond van die radikale verskuiwings in kennisparadigma is daar na my mening baie belofte te vind in konstruktivistiese benaderings tot onderrig. Konstruktivisme, “constructivism”, is sekerlik een van die mees beduidende bewegings in teoretiese sienings van leer oor die laaste halfeeu. Hoewel konstruktivisme nie 'n pedagogie daarstel nie, maar eerder verduidelik hoe leer plaasvind, is dit natuurlik as sodanig bepalend vir hoe 'n effektiewe pedagogie daar moet uitsien.¹⁸ Die beste wyse om konstruktivisme saam te vat is dalk in die stelling: Kennis word nie gevind nie, maar gemaak. Dit impliseer dat 'n mens nuwe kennis bekom nie bloot deur 'n eksterne, objektiewe, vaste stel idees te absorbeer nie, maar eerder deur jou eie kennis te skep deur nuwe ervarings in verband te bring met jou bestaande kennisbasis.¹⁹ Sodoende voeg jy nie net by tot jou kennisbasis nie, maar herskep dit ook deurdat nuwe verbintenisse in jou kennisbasis tot stand kom wat tot nuwe betekenis vir jou lei.²⁰ Die verwerwing van kennis in hierdie siening is dus 'n subjektiewe en aktiewe proses. Kennis is gevolglik tydelik, ontwikkelend, sosiaal en kultureel bemiddel en dus nie-objektief.

Die implikasies van konstruktivistiese insigte vir onderrig is redelik radikaal, maar spreek na my mening ook direk tot ons dilemma van 'n snel-veranderende of –veranderde kenniswêreld. Een van die belangrikste implikasies is dat onderrig nie bloot as 'n oordragsoefening beskou kan word nie, met ander woorde as 'n aktiwiteit waarin 'n kundige dosent spesifieke brokkies kennis aan studente oordra wat dan deur hulle geabsorbeer word. Soos Erns von Glasersfeld, een van die voorste denkers in konstruktivisme dit effektief stel: “[w]e can no longer justify the intention of conveying our ideas to

¹⁸ CT Fosnot & RS Perry “Constructivism: A Psychological Theory of Learning” in CT Fosnot (ed) *Constructivism: Theory, Perspectives, and Practice* 2 ed (2005) 33; A Zietsman “Constructivism: Super Theory for All Educational Ills?” (1996) 10:1 *South African Journal of Higher Education* 70–72; M Larochelle & N Bednarz “Constructivism and Education: Beyond Epistemological Correctness” in M Larochelle, N Bednarz & J Garrison (eds) *Constructivism and Education* (1998) 3–5.

¹⁹ J Pelech *The Comprehensive Handbook of Constructivist Teaching* (2010) 8.

²⁰ Pelech (supra).

receivers (as though ideas could be wrapped in little packages by means of words)".²¹ Aangesien leer alleen kan plaasvind deur die skep van kennis moet onderrig die student as aktiewe deelnemer betrek. Die rol van die dosent verander gevolglik ook van dié van 'n outoritêre orakel wat verheve insigte in leë vate afgiet na een van fasiliteerder wat studente se eie, individuele kennisskepping stuur. Eweneens verander die rol van die student van passiewe ontvanger van inligting na aktiewe kenniskepper wat uiteindelik uitsluitlik daarvoor verantwoordelik is om haar eie kennis te verbreed. Maar die kenniskepper, die student, staan natuurlik nie alleen nie. Die oefening van kennisskepping vind in 'n bepaalde gemeenskap plaas deur middel van die interaksies in daardie gemeenskap. Die konteks, beide individueel en gemeenskaplik, waarbinne kennis geskep word speel gevolglik 'n sleutelrol in leer.

Die raakpunte tussen so 'n konstruktivistiese benadering tot onderrig en die veranderinge in studente se kennisparadigma behoort reeds duidelik te wees. Hier het ons 'n pedagogie wat klem plaas op aktiewe deelname, 'n vermenging van die rolle van kennisoordrag en kennisskepping. Hierdie is 'n pedagogie wat kennis nie as 'n vaste, objektiewe kommoditeit hanteer nie, maar wat die sentrale rol van die ontvanger, die student, beklemtoon binne 'n gemeenskap van kenniskeppers. So 'n benadering behoort meer natuurlik te kom vir 'n "digital native" gegewe die sterk ooreenkomste met digitale kennisomgang.

Finally, constructivism tells us that learning is not a simple linear process.²² Teaching thus cannot be conceptualised as a simple linear exercise of transferring information from the expert to the amateur in a one-directional manner either. Learning and thus teaching is rather a complex process, nonlinear in nature.²³ This implies that teaching must allow for difference; there cannot be only one way of doing or knowing. The teacher must actively recognise that her construction of knowledge is not the final word and that students' constructions have legitimacy.²⁴ Students' own construction not only informs their own knowledge base but also contributes to the restructuring of the entire knowledge community's construction, including that of the teacher. It is thus imperative that teaching should focus on the engagement and relationship among members of the learning group. It is the engagement activity itself that is of value. In this way the multidimensionality of the learning process is facilitated. This realisation also reaffirms the insight that learning, and thus teaching, occurs not only in a vertical model but also in a horizontal one where everyone in the knowledge community learns from each other.²⁵ The complex nature of learning implies that knowledge and its construction cannot be broken up into "discrete subskills" that can be taught separately and in isolation and that concepts cannot be taught out of context.²⁶ It is only within context and within a relational network that knowledge can exist. Teaching a particular body of knowledge should thus proceed from this relational perspective. Again the

²¹ E von Glasersfeld "Why Constructivism must be Radical" in M Larochelle, N Bednarz & J Garrison (eds) *Constructivism and Education* (1998) 23–27.

²² Fosnot & Perry (supra) 11.

²³ Fosnot & Perry (supra) 11; DC Phillips "The Good, the Bad, and the Ugly: The Many Faces of Constructivism" (1995) 24:7 *Educational Researcher* 5, 11.

²⁴ Phillips (supra) 10 with reference to Von Glasersfeld.

²⁵ E Bitzer "Understanding Co-operative Learning: A Case Study in Tracing Relationships to Social Constructivism and South African Socio-educational Thought" (2001) 15:2 *South African Journal of Higher Education* 98, 100.

²⁶ CT Fosnot (ed) *Constructivism: Theory, Perspectives, and Practice* 2 ed (2005) ix.

relationship between the first and second dimensions of teaching comes to the fore. This philosophy of teaching aligns well with the network paradigm in a new knowledge world.

Turning then to the third dimension in my triangle – the discipline. What role does disciplinary theory play in this construction of a love triangle that will spawn effective teaching practices? In my view, it is critical to align the theoretical underpinnings of one's discipline to the more generic first two dimensions if one hopes to be successful in designing effective learning opportunities. The reason for this is simply that while the first two dimensions may be generic, the actual students in our classes are not. They experience these first two dimensions within our disciplines. In other words, our students potentially approach our disciplines from within a new knowledge paradigm and evaluate claims within our discipline from that perspective when attempting to assimilate disciplinary insights into their existing knowledge bases in constructing new disciplinary knowledge. You see how discipline cannot be detached from the implications of the first two dimensions hence resulting in a triangular relationship. In my view, we thus stand a greater chance of success in our teaching endeavours in we manage to align our approach in the first two dimensions to disciplinary theory.

In law I have argued for such an alignment in what I call transformative legal education.²⁷ In this framework I bring the guiding legal theory of transformative constitutionalism in South Africa in line with the developments in the first two dimensions of teaching. While I do not want to go into the detail of transformative legal education here, it may be worth noting the key characteristics of the disciplinary theory to illustrate the alignment I am talking about. Transformative constitutionalism calls for a vision of law away from authority towards justification, a vision where all legal positions must be justified in relation to values using substantive reasoning. It is a vision of law within context, not law in isolation. In other words it views law as part of a broader social structure in a way that results in extra-legal considerations often being determinative in resolving legal questions rather than simply resolving legal question with reference to legal doctrine. If I want to convey this theoretical paradigm to my law students the insights from the first two dimensions of teaching that I have highlighted become key allies. We noted in both those dimensions that I cannot or should not play the sole active role of authoritative holder of knowledge to be conveyed to students as passive recipients. The shift required under the first two dimensions reinforces the message of a shift in law from authority to justification. Thus, in adopting the insights from the first two dimensions in my teaching practice, I may just be able to internalise the insights of transformative constitutionalism, i.e. the guiding theory of my discipline, in the way that my students acquire knowledge of the law.

But perhaps much more relevant for present purposes is the reverse implications of the triangular relationship for disciplinary engagement. It brings home the realisation at this research-focused institution that academics are teaching researchers and not merely researchers. Thus by viewing discipline within this triangular relationship with learning and teaching we are forced to engage with the designation of teaching researcher. To me this means that I am forced to engage with disciplinary theory in the context of teaching objectives. Teaching and theoretical disciplinary research thus do not stand apart. In this manner my teaching responsibilities become a major driver of my disciplinary research. At

²⁷ Quinot (supra).

the same time, I cannot engage in such teaching-driven research exercise without solid knowledge of the first two dimensions of the triangular relationship. I must thus, as a prerequisite for my research, engage with teaching and learning. In this way research and teaching becomes mutually embedded.

Ten slotte, ek dink hierdie teoretiese raamwerk resoneer sterk met huidige denke oor leer en onderrig op ons kampus. As ek kyk na die lys van eienskappe in die profiel van US graduandi oftewel “graduate attributes” wat tans op die tafel is, is dit vir my duidelik dat baie van die implikasies wat ek uitgelig het in hierdie aanbieding sentraal staan tot ons siening van wat ons wil aflewer in ons studente. Ons sien daar die fokus op ’n aktiewe intellektueel. Die belang van inskakeling in en gemaklike omgaan met netwerke kom duidelik na vore hetsy as deelnemer in ’n bepaalde konteks of in die vorm van netwerk van denke en kennis. Die konsep strategie vir leer en onderrig wat ook tans op die tafel is sluit ook nou aan by baie van die implikasies wat ek vandag hier beklemtoon het. Ek dink dus dat soos wat ons vorentoe gaan met ons besinning oor leer en onderrig by hierdie universiteit, ’n teoretiese raamwerk soos die liefdesdriehoek wat ek hier voorgehou het ons goed te staan kan kom.