

# TRANSFORMATIVE LEGAL EDUCATION

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*Transformative legal education*

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## ABOUT THE AUTHOR

Geo Quinot obtained the degrees BA (Law) *cum laude*, LLB *cum laude* and LLD from Stellenbosch University. Upon obtaining his LLB degree in 2000, he was awarded the Stellenbosch University Chancellor's Medal. He also obtained an LLM from the University of Virginia School of Law in the USA on a Fulbright scholarship. In 2004 he was admitted as an advocate of the High Court of South Africa.

Geo's research focuses on general administrative law, including a particular focus on the regulation of state commercial activity. He is the author of various articles in academic journals, electronic publications and chapters in books. He has authored two books, *State Commercial Activity: A Legal Framework* (2009) and *Administrative Law Cases and Materials* (2008). He is currently the lead African partner in a British Academy-funded research partnership with the University of Nottingham, involving a large number of mostly African

scholars researching public procurement regulation in Africa. Geo is involved in a number of teaching development initiatives, including a revision of the university's assessment policy and the establishment of a comprehensive programme to develop law students' writing skills. Following articles at Sonnenberg Hoffmann Galombik, Geo was appointed as a lecturer in the Department of Public Law, Stellenbosch University, in 2004 where he teaches administrative law, constitutional law and public procurement law. He was promoted to senior lecturer in 2007, to associate professor in 2009 and to professor in 2010. He is currently the editor of the *Stellenbosch Law Review*. Geo is married to Marinelle and they have two daughters, Delinda (4) and Céline (2).

## MEER OOR DIE OUTEUR

Geo Quinot het die grade BA (Regte) *cum laude*, LLB *cum laude* en LLD aan die Universiteit Stellenbosch verwerf. Met die verwerwing van sy LLB-graad in 2000 is die Kanseliersmedalje van die Universiteit Stellenbosch aan hom toegeken. Hy het ook 'n LLM-graad aan die Universiteit van Virginia in die VSA verwerf, waar hy as 'n Fulbright-beurshouer gestudeer het. In 2004 is hy toegelaat as 'n advokaat van die Hoë Hof van Suid-Afrika.

Geo se navorsing fokus op algemene administratiefreg, insluitende 'n spesifieke fokus op die regulering van staatskommersiële handelinge. Hy is die outeur van talle artikels in vaktydskrifte, elektroniese publikasies en hoofstukke in boeke, sowel as twee boeke, *State Commercial Activity: A Legal Framework* (2009) en *Administrative Law Cases and Materials* (2008). Hy is tans die Afrika-leier in 'n navorsingsvennootskap met die Universiteit van Nottingham, befonds deur die British Academy, wat 'n groot aantal navorsers, meestal uit Afrika, insluit om die stand van staatsverkrygingsreg in Afrika te ondersoek. Geo is betrokke by 'n aantal inisiatiewe gerig op onderrigontwikkeling insluitende 'n hersiening van die universiteit se assesseringsbeleid en die vestiging van 'n oorkoepelende program om regstudente se skryfvaardighede te ontwikkel. Na 'n leerklerskap by Sonnenberg Hoffmann Galombik is Geo in 2004 aangestel as 'n lektor in die Departement Publiekreg, Universiteit Stellenbosch, waar hy administratiefreg, staatsreg en staatsverkrygingsreg doseer. In 2007 is hy bevorder tot senior lektor, in 2009 tot mede-professor en in 2010 tot professor. Hy is tans die redakteur van die *Stellenbosse Regtydskrif*. Geo is getroud met Marinelle en hulle het twee dogters, Delinda (4) en Céline (2).



# TRANSFORMATIVE LEGAL EDUCATION

## INTRODUCTION

If I were to say, “Theory matters”, most people would not find it particularly surprising. In fact, you would think it obvious that as a university professor, I would make such a statement. But what would your reaction be if I were to say, “Theory matters in teaching”? It is on this question that I want to dwell in this lecture and in particular within the context of teaching law in South Africa today.

I shall propose that theory matters very much in teaching law in contemporary South Africa, and I shall put forward a theoretical framework within which law should, in my view, be taught at South African universities. I call this framework ‘transformative legal education’, and in short it is what I consider law teachers *can* and “must do in order to achieve the aims of transformative constitutionalism”.<sup>1</sup> I do not propose a new theory, but I rather propose a theoretical framework, that is, a framework that draws upon a number of insights from different disciplines to guide the teaching of law. In setting up this framework, I shall focus on three basic elements of education, namely 1) the subject matter or discipline being taught (here law), 2) the teacher or the act of teaching and 3) the student or learner. I shall align each of these dimensions of legal education with contemporary theories and insights within that particular field. All of these I consider to hold profound implications for the way that law teachers approach their craft. These insights call for a fundamental shift from formalistic legal reasoning to substantive reasoning under a transformative constitution, for a shift towards a constructivist student-centred teaching model and for the recognition of a paradigm shift in knowledge from linear to nonlinear, relational or complex. In conclusion I shall argue that these different insights force us to critically reassess our approach to legal education and explain how these insights can contribute to a meaningful framework within which law can responsibly be taught in contemporary South Africa.

## A NEW APPROACH TO LAW AS THE SUBJECT OF EDUCATION

One of the first scholars to point to the fundamental shift in legal culture that our new constitutional dispensation envisaged was Alfred Cockrell. He labels

the pre-constitutional view of law as a “formal vision of law” and notes “factors contributing to this ascendancy of the formal vision” as including “an emphasis on narrowly-construed ‘private law’ subjects in the training of law students; an aversion to the teaching of ‘policy matters’ as part of the law syllabus at universities; a belief that good lawyering was largely a matter of textual exegesis and technical expertise”.<sup>2</sup> With reference to John Dugard’s inaugural lecture, Cockrell notes that this vision “denied a creative role in judicial law-making”.<sup>3</sup> Against this background, he argues that the new constitutional dispensation involves “changes ... at a deep level within the South African legal system” that call for “a substantive vision of law” involving an obligation to “engage with ... moral and political values” in adjudication.<sup>4</sup> In this substantive vision of law, a legal rule will only be valid if it “conform[s] in some degree with notions of what is substantively right, just or good”.<sup>5</sup> But, most importantly, it is not merely the acknowledgement of such substantive notions behind legal rules that characterises the fundamental shift called for in South African legal culture but also the open engagement with such substantive reasons. Etienne Mureinik labels this shift as one from a “culture of authority” to a “culture of justification”.<sup>6</sup> The new constitutional dispensation thus introduces a fundamental shift in legal methodology as much as (or perhaps even more than) a shift in substantive law. As Cockrell rightly points out, this signals a “paradigm shift with profound implications”.<sup>7</sup>

A number of scholars have put forward similar accounts of the fundamental shift in law and our legal culture under the new constitutional dispensation. Thus, Chief Justice Langa notes that it is “no longer sufficient for judges to rely on the say-so of parliament or technical readings of legislation as providing justifications for their decisions” but that “judges bear the ultimate responsibility to justify their decisions not only by reference to authority, but by reference to ideas and values”.<sup>8</sup> One of the most influential of these accounts has been Karl Klare’s notion of transformative constitutionalism.<sup>9</sup> He describes this notion embodied in our constitutional transition as

a long-term project of constitutional enactment, interpretation, and enforcement committed (not in isolation, of course, but in a historical context of conducive political developments) to transforming a country’s political and social institutions and power

relationships in a democratic, participatory, and egalitarian direction. Transformative constitutionalism connotes an enterprise of inducing large-scale social change through nonviolent political processes grounded in law.<sup>10</sup>

Integral to this project is the open engagement with substantive values in justifying legal outcomes. However, Klare notes a disconnect between the prevailing legal culture in South Africa and the commitment of the Constitution<sup>11</sup> to social change. In particular, he notes that despite the “substantively postliberal and transformative aspirations”<sup>12</sup> of our Constitution, our legal culture is still a highly conservative one, meaning that South African lawyers instinctively rely on a legal methodology that places “relatively strong faith in the precision, determinacy and self-revealingness of words and texts” and that interpretation of such legal texts is “highly structured, technicist, literal and rule-bound” with little emphasis on values and policy.<sup>13</sup> Instead, Klare calls for the development of a legal culture that embraces the normative framework put forward by the Constitution in its methodology. This involves not only overt substantive reasoning but also recognition of the possibilities for creativity in applying and developing the law to meet the aims of social transformation.

So what are the implications of all of this for legal education? That is, what do the fundamental changes in our discipline mean for the teaching of that discipline? There are a number of fairly obvious responses. Firstly, the substance of what is being taught is and should be, of course, quite different from what it was in the past. New areas of law such as fundamental rights and judicial review must be accommodated in the law curriculum, and the curriculum should be adjusted to reflect the new paradigm based on a supreme justiciable Constitution. But also, established areas of law that have been fairly settled for a considerable period of time are now being transformed in the light of the Constitution. Some of the most remarkable examples are the law of delict and property.<sup>14</sup> Teaching these areas of law is thus not business as usual either.<sup>15</sup> Students should be trained also in these areas, particularly those that have not seen the same level of constitutional infusion, such as the law of contract,<sup>16</sup> to assess long-established common-law rules against the values entrenched in the Constitution.

This brings me to the second implication of transformative constitutionalism for legal education. Students should be educated not only in the new substance of the law but also in the new legal method or reasoning mode. As noted above, the new constitutional dispensation

calls for a substantive mode of legal reasoning. Matters of morality and policy, even politics, can no longer be excluded from legal analysis. This means that such matters should also enter the law lecture hall.<sup>17</sup> Law teachers will be failing their students if they do not enable them to engage with these ostensibly extra-legal considerations in dealing with the law. This also requires a much greater emphasis on the context in which law operates, the society that it intends to regulate, in our case to transform. The door of the law lecture hall can no longer be shut to what is going on out there. The shift required from law teachers to instruct students in this new paradigm will in many instances be quite radical, even, as Cockrell notes, traumatic.<sup>18</sup> It will call into question our own professional sensibilities and will require a critical self-assessment of whether we are able to engage in the kind of value-based reasoning that we are now required to teach. It also highlights the need for a much greater interdisciplinary approach to legal education. In the first instance, law must be presented not as a collection of distinct branches, each existing within its own silo, but in an integrated fashion that reveals the connections among the various branches, especially in relation to the shared normative value system that underlies it all (or should underlie it), flowing from the Constitution. This does not only apply to the distinct substantive branches of the law, say contract and administrative law, but also the distinct legal traditions coexisting in South Africa. While constitutional supremacy implies “one system of law”,<sup>19</sup> we cannot view that system in the singular. That one system is made up of various, sometimes conflicting, legal traditions: various forms of common law, customary law, religious law and teaching ‘the law’ means coming to grips with this plurality.<sup>20</sup> Secondly, much more emphasis must also be placed on the integration of law with other disciplines, obvious examples being economics, philosophy, political science, sociology, psychology and public administration, to name a few. Without skills in these areas, law students will not be equipped to engage in the substantive mode of reasoning required within transformative constitutionalism. In this package of skills that law students should acquire, perhaps the most important is that of creativity. As Klare notes,<sup>21</sup> our constitutional drafters could not have envisaged that we will transform our society in light of the Constitution with reliance on the same legal rules and legal sensibilities of the pre-constitutional era. Our constitutional transition challenges us to be creative, to imagine new ways of doing things in law. In turn, this challenges legal education to foster creativity. We must train lawyers to be innovators under the Constitution, not simply technicians.<sup>22</sup>

As demanding as these implications of our legal transition may be for legal education, the biggest challenge lies not in *what* we teach, either in substantive law or skills, but in *how* we teach, that is our methodology in legal education. Just as transformative constitutionalism requires judges to adjudicate by using not only the new rules of our constitutional democracy but also the new adjudicative method, our new legal paradigm requires law teachers to teach differently. To my mind, this is the most important implication of our transition for legal education but certainly also the most difficult. As law teachers, our legal culture manifests in the way we teach and it is thus our teaching methodology that we need to critically engage with in order to align what we do with the transformative aspirations of our Constitution. This is difficult, for as Klare notes, these “characteristic rhetorical strategies” and “professional norms” seem normal and obvious to us and “in the absence of critical self-reflection and/or transformative experience, appear to be natural and fixed” rather than contingent and culturally situated as they in fact are.<sup>23</sup> We may thus not be aware of the significant influence that these practices have on what we do in class and hence their impact on law graduates’ perception of the law and their role in society.<sup>24</sup> Significantly, these practices can have a limiting effect not only on law graduates’ inclination to drive transformation but indeed also on their ability to be innovators under the Constitution.

This may seem very abstract, so let me look at a few more concrete examples of aligning teaching methodology, pedagogy, with transformative constitutionalism. If we want to instil in law graduates the shift from a “culture of authority” to a “culture of justification”, that is an understanding of the validity of a legal position not because of the force behind it (e.g. as contained in a statute or court judgment) but because of the sound normative considerations upon which it is explicitly based, our pedagogy needs to reflect justification and not authority. We should thus ask ourselves what perception of law is instilled by a methodology that only involves a sage standing on a stage and imparting ‘The Law’ to a group of as yet uninitiated apprentices. What happens when law students by-and-large remain passive recipients of information? What view do students form of the law when they are relentlessly confronted with a preselected package of authoritative materials that they should simply learn by rote within a rigid curricular structure? What is conveyed by an assessment strategy that simply requires the replication of the views imparted as authoritative in these materials and contact sessions and rewards those

that get it as close as possible to the original? In my view, such practices reflect and thus preserve a culture of authority.<sup>25</sup> Transformative constitutionalism forces us to imagine a different methodology. A methodology that enables students to actively participate in developing their own understanding of rules against their own but critically also others’ background context would aid in developing an understanding of the law as socially constructed and situated. Such a methodology should focus the attention on the assumptions underlying legal rules and their normative make-up<sup>26</sup> and leave the black-letter, technical dimension to background learning, hence highlighting the importance of the normative justification for rules rather than their mere authoritative existence. Rather than attempting to present students with a coherent, contained body of rules that constitute the law, our methodology should present them with the fragmented, pluralist, inconsistent and often conflicting claims to authority that in aggregate constitute the law. The methodology should encourage students to be critical and to not simply accept a position because it is stated in an ostensibly authoritative source or even claimed to be correct by the lecturer. The methodology should enable students to not be satisfied with knowing what the legal position is but to imagine (also in radical terms) what it could be. And, perhaps most importantly, our methodology should be explicit. We should explain to our students why we do things the way we do and be able to justify our methodological choices. By adopting such a pedagogy, we will be able to infuse a transformed vision of the law, as dictated by our Constitution, in the way that students become members of the legal community.

This brings me to our second element in setting up a theoretical framework of transformative legal education, namely the teacher or the act of teaching. The question in this second element is whether there is a way to conceptualise a pedagogy that will enable us to effectively teach students in law *and* instil in them the new transformative aspirations of our discipline. Put differently, what options exist in educational theory that can help us construct a pedagogy that complements the fundamental shifts in our discipline?

## CONTEMPORARY VIEWS OF EDUCATION: FROM TRANSMISSION TO CONSTRUCTION

One of the most significant developments in theoretical perspectives on learning over the last

half century has been the influence of constructivism.<sup>27</sup> Fosnot captures the gist of this theory when she states the following:

Constructivism is a theory about knowledge and learning; it describes both what 'knowing' is and how one 'comes to know' ... the theory describes knowledge not as truths to be transmitted or discovered, but as emergent, developmental, non-objective, viable constructed explanations by humans engaged in meaning-making in cultural and social communities of discourse. Learning from this perspective is viewed as a self-regulatory process of struggling with the conflict between existing personal models of the world and discrepant new insights, constructing new representations and models of reality as a human meaning-making venture with culturally developed tools and symbols, and further negotiating such meaning through cooperative social activity, discourse, and debate in communities of practice.<sup>28</sup>

However, as many scholars in the vast literature on constructivism and education have pointed out, constructivism is not a theory of teaching; it does not present us with a ready-made pedagogy, a "cookbook teaching style" or pat set of instructional techniques.<sup>29</sup> Rather, as a theory of learning, of how we manage to develop new insight and skills, constructivism holds significant implications for teaching. It serves as a point of departure upon which a theory of teaching can be constructed, as "ground zero" from where teachers can develop their pedagogy.<sup>30</sup>

In my view, constructivism provides us with the theoretical paradigm to structure a pedagogy that will serve the purposes of transformative legal education. In the limited scope of this lecture, it is not possible to explore in any depth constructivism in all its many facets and strands or even fully its implications for education.<sup>31</sup> I will thus simply point out some key characteristics of constructivist thought that bear most pertinently on framing transformative legal education.

Perhaps the best way to capture the core of constructivism is the statement, 'Knowledge is not found but made'. This means that when one gains new knowledge, one does not simply absorb some objective, fixed set of ideas. In this perspective, knowledge is "temporary, developmental, socially and culturally mediated and thus non-objective".<sup>32</sup> The development of knowledge, learning, is accordingly an active and subjective process. One learns, or in constructivist terminology constructs knowledge, by connecting new experiences to one's existing knowledge base.<sup>33</sup> By doing so one

does "not only add to the original knowledge base but also restructure that pre-existing knowledge base".<sup>34</sup> This subjective process of constructing knowledge happens not only at the individual level but also within a particular socio-cultural context. As one of the leading constructivist educationalists, Paul Cobb, states, "the cognitive process, i.e. the individual construction of ... knowledge, takes place against a socially constructed plane".<sup>35</sup> Knowledge is thus subjective, firstly, because it can only be constructed by and exist within the mind of the individual knower<sup>36</sup> and, secondly, because that construction happens within a particular "knowledge constructing community".<sup>37</sup> Not only are the tools that we utilise to construct new knowledge, that is what we consider appropriate mechanisms of engagement, socially contingent, but the distinct bodies of knowledge that we can engage with, the disciplines, are also socially constructed.<sup>38</sup> In Cobb's words, learning is thus "both a process of self-organization and a process of enculturation".<sup>39</sup>

The implications of these constructivist insights for teaching are quite radical. One of the most important implications is that teaching can no longer be viewed as a transmission exercise, that is an activity in which a knowledgeable teacher transmits discrete bits of information to students who duly absorb it. In the words of another leading constructivist, Ernst von Glasersfeld, as teachers "[w]e can no longer justify the intention of conveying our ideas to receivers (as though ideas could be wrapped in little packages by means of words)".<sup>40</sup> Since learning can only occur through construction of knowledge, teaching must involve learners as active participants. The role of the teacher thus changes from that of the sole and authoritative holder of knowledge that must be imprinted on the blank slates of her students to a role of facilitator that must guide students' own efforts at construction.<sup>41</sup> Conversely, the learners' roles change from passive recipients of information to active knowledge constructors who "are responsible for defending, proving, justifying, and communicating their ideas to the classroom community".<sup>42</sup>

Another important implication of constructivism for teaching is the central role of context in learning. At the individual level, constructivism tells us that a particular learner's own context is determinative of that learner's construction of the knowledge being taught. The class experience is thus only a part of the learning process, with each student's own existing knowledge base forming the crucial other part through which the new class experience is internalised to add to and reconstruct the learner's knowledge, which may

result in learning. At the communal level, constructivism tells us that active engagement within the particular knowledge community defines learning so that the quality of learning depends largely on the communal context. The richer students' engagement with the knowledge community is, the richer we can expect their learning to be. This again emphasises the need for active student engagement. Here constructivism aligns with notions of differentiated instruction that call for the use of different teaching strategies in order to enable students with unique learning styles to effectively engage in knowledge construction.<sup>43</sup> But it also implies that the richness of the knowledge community becomes a key consideration in effective teaching. Since students learn by engaging, not just on a vertical level with the teacher but also critically on a horizontal level with peers,<sup>44</sup> diversity in the learning community becomes a strength, even a prerequisite. As students actively engage with a greater variety of background experiences, that is with others that bring very different existing knowledge bases to the knowledge community, their own existing knowledge bases are increasingly challenged and the tension between their "existing personal models of the world and discrepant new insights"<sup>45</sup> increases so that the struggle to reconcile these, which is the key to constructing new knowledge, intensifies and greater learning is facilitated.

Finally, constructivism tells us that learning is not a simple linear process.<sup>46</sup> Teaching thus cannot be conceptualised as a simple linear process 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.<sup>47</sup> 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.<sup>48</sup> 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.<sup>49</sup> Students' engagement with each other is thus as important as engagement with the teacher and the

materials. The complex nature of learning also 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.<sup>50</sup> 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.

I think the potential of constructivist pedagogies for transformative legal education should already be evident. Such pedagogy emphasises the central role of context, which we have seen is also a key concern in transformative constitutionalism. The learning process, including the knowledge constructed, is conceptualised as socially contingent, which affirms the view of law as a social construct. This pedagogy opens the door to contextual influences outside the strict confines of legal doctrine and embraces an approach that draws attention to both the real-world grounding of law and its relationship with other disciplines. It is a pedagogy that involves teaching law in a much broader social context. It also defies an atomistic approach to the various branches of the law in favour of a holistic view, a view that attempts to ground the learning of legal rules within the broader legal framework, highlighting the relationship between different rules and branches of law rather than only the isolated technical dimensions of the particular rule or branch.<sup>51</sup> Constructivism furthermore allows for the acceptance, even the embrace, of divergence. Since constructivist pedagogy does not insist on a single correct approach or answer, students are encouraged to conceptualise the discipline in divergent ways. In this way, students can become much more comfortable with pluralism and conflict in a pluralist legal system such as ours.

As noted above, our biggest challenge in teaching law in a manner true to transformative constitutionalism is to reflect the culture of justification and reject a culture of authority in the way that we teach. Constructivist pedagogy allows us to do exactly that. It enables a form of "epistemological democracy" in which teaching "serve[s] ends opposed to the 'colonization of the knowledge of students by that of scholars'".<sup>52</sup> In this pedagogy, not only can we *tell* students about the value of searching for justification for legal rules as opposed to simply accepting their authority; we can also *show* students how it is done by teaching in that manner. Thus, when, under constructivist pedagogy, the teacher is no longer the sole authoritative figure in the class presenting students with ready-made knowledge for them to simply accept but the process of learning occurs by students engaging

with the materials and each other and forming their own constructions that they must justify within the knowledge community,<sup>53</sup> guided by the teacher using a set of explicit and clear normative values, the students learn the law in the way that the law is supposed to function as envisaged by transformative constitutionalism. Students learn that the authority of a position rests on the justification for that view and not on the command behind it.

Constructivist pedagogies also create scope for creativity. By viewing the learning process as one of constructing new knowledge and rejecting a single 'correct' construction of knowledge, the possibility for imagining new ways of doing things is significantly enhanced. This, as we have seen, is another critical imperative of transformative constitutionalism. Again, the value of such pedagogy is not only that it creates the scope for innovation in the classroom but also that it inculcates in students the necessity of and ability to approach law creatively.

Eventually constructivism focuses the attention on how learning occurs,<sup>54</sup> in other words, how it is that through engagement in a teaching environment a student can learn something. The result is that by adopting constructivist pedagogy, we can become much more sensitive to the underlying process of teaching and learning and its socio-cultural characteristics. We are forced to engage with our assumptions about knowledge, learning and our students. This self-awareness can help us to unmask "characteristic rhetorical strategies" and "professional norms"<sup>55</sup> in legal education that we may consider "natural and fixed" but that are indeed socio-culturally contingent and that may stand in the way of true transformation. Constructivism thus allows us to critically interrogate our legal culture as teachers of law, which forms a key part of the reassessment of legal culture generally under transformative constitutionalism.

The significant overarching promise of constructivist approaches to legal education is that all of these benefits are embedded in the way that law is taught. Thus by joining the substantive commitments of the governing theory of our discipline with pedagogy, these advantages, aligned as they are to the project of transformative constitutionalism, will as a result become part of our students' paradigm of the law.

There is, however, a particular danger that constructivist pedagogies may reinforce the privileging of certain skills and forms of knowledge that may again lead to exclusion of alternatives, the very thing that constructivist pedagogies aim to avert.<sup>56</sup> The realisation of this threat in legal education would of course also be destructive of the project of transformative

constitutionalism. This danger lies in the possibility that constructivist pedagogy may not pay sufficient attention to those skills necessary to participate in the knowledge community and thus to learn. Popkewitz argues that discourses in constructivist pedagogies regarding active learner participation "generate principles which classify and divide those who have and do not have the appropriate dispositions, sensitivities, and capabilities to act and participate".<sup>57</sup> As a result, "exclusions are produced through the systems of recognition, divisions, and distinctions that construct reason and the reasonable person".<sup>58</sup> Critically, these divisions may not be explicitly acknowledged and may seem natural rather than socially constructed as they are.<sup>59</sup> Other commentators have noted similar challenges in adopting constructivist pedagogies. In particular, the central notion of constructivism that one learns by assimilating new experiences into one's existing knowledge base implies that a teacher must have an accurate view of a student's existing knowledge base in order to assist that student to effectively engage with new experiences that can lead to learning.<sup>60</sup> If the teacher operates on false assumptions about students' existing knowledge base, a constructivist pedagogy may inhibit learning and exclude those students for whom the baseline assumptions are incorrect. This is particularly important when dealing with a diverse student body in which students do not share the same background experiences. Exclusion can quite easily occur in such classrooms where a particular "normalized vision of the natural" student predominates.<sup>61</sup> However, there are a number of strategies to address these challenges.

Firstly, the problem of underlying and implicit assumptions regarding what is considered as reason within a particular knowledge community and the appropriate tools to justify particular constructions of knowledge may be countered by retaining a dynamic vision of the discipline at issue. Transformative legal education thus involves both dynamic visions of law as a discipline in terms of transformative constitutionalism and the process of learning by adopting constructivist pedagogy. While the latter functions to open up the teaching and learning process, adherence to transformative constitutionalism ensures that the knowledge field, law, is not viewed as stable, fixed or one-dimensional, thus keeping open the possibility for radically different constructions. Accordingly, no single conception of justification is privileged.

A second strategy to avoid these dangers is obviously to develop a more accurate view of students' knowledge base. This brings us to our third theme, a focus on

learners. Since it is critical in adopting a constructivist pedagogy for teachers to better understand their students' backgrounds and, importantly, students' experiences of knowledge construction, we need to interrogate our own assumptions about how students approach knowledge and consider whether these assumptions are still accurate. As Von Glasersfeld notes, a constructivist orientation may "bring the realization that students perceive their environment in ways that may be very different from those intended by the educators".<sup>62</sup>

## EDUCATION AND STUDENTS' KNOWLEDGE WORLD

While I think that one should be careful not to jump to conclusions about the traits 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",<sup>63</sup> and the demands of this new generation on education,<sup>64</sup> there does seem to be a 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 Greenfield<sup>65</sup> and director of the library of Alexandria Prof Ismail Serageldin,<sup>66</sup> 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. Greenfield talks 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.<sup>67</sup>

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 advent of digital technologies.<sup>68</sup> 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.<sup>69</sup> This paradigm has shaped the way we conceive of knowledge and physically how our brains engage with the construction of knowledge. As a result, Nicholas Carr states:

For the last five centuries ... the linear, literary mind has been at the center of art, science, and society ... it's been the imaginative mind of the Renaissance, the rational mind of the Enlightenment, the inventive mind of the Industrial Revolution, even the subversive mind of Modernism. It may soon be yesterday's mind.<sup>70</sup>

Digital technologies, and in particular the Internet, offer us a very different paradigm of knowledge. While initially digital information closely resembled printed form, something which is reflected in terminology such as *web pages* and *bookmarks*, the digital form has now departed radically from its print counterpart. 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. As Serageldin notes, this changes our conception of knowledge from a bricks-in-a-wall model whereby distinct parts form the whole to a more fluid view, such as water flowing in a river, with much more dynamic and interrelated qualities.<sup>71</sup> Even just the activity of scrolling and clicking through a digital document as opposed to turning the pages of a book is a very different form of engagement.<sup>72</sup>

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.<sup>73</sup> The conventional form of information is also no longer restricted to text, and the interaction among text, graphics, sound and video has become commonplace.<sup>74</sup> Even the relationship between these different formats of information may be different in digital form as compared to print. Whereas in print we would mostly consider text to be the primary vehicle for conveying information with graphics as a secondary format mostly utilised to illustrate the text,<sup>75</sup> the relationship may be exactly the opposite in digital format, with graphics, sound and video playing a much more central role and text, especially large portions of text, increasingly taking a backseat in representing information.

Not only is the way we access information electronically radically different from traditional print form but also the way we create information. Unlike creating a text

in print, electronic texts are not static.<sup>76</sup> An author can constantly change the published text and automatically update readers' version of it. This "provisional nature of digital text" inevitably impacts on the way that an author approaches the text and the creative process.<sup>77</sup> 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".<sup>78</sup> Digital platforms can allow users to actively engage with information. Unlike print form, the digital form thus greatly enhances activity on the part of the user. She can comment directly on a piece and add to an evolving text. Some sources of information, such as Wikipedia, allow readers to continuously participate in the creation and revision of the source. Carr notes in his 2010 work that "[m]any observers believe it's only a matter of time before social networking functions are incorporated into digital readers, turning reading into something like a team sport."<sup>79</sup> The iPad and its rivals have indeed now made this prediction a reality. This interactivity enabled by the digital revolution is not restricted to textual knowledge experiences. Many nontextual activities hitherto regarded as largely passive encounters, such as attending the theatre or a musical recital, can be converted into interactive experiences with reliance on digital media. An audience can, for example, interact with an orchestra by means of cell phone requests, or a theatre audience can engage in discussion of a play in real time using social networks such as Twitter.<sup>80</sup>

These examples of differences between traditional forms of knowledge experiences, primarily through the printed word, and digital experiences, predominantly by means of the Internet, signal a shift from a largely linear conception of knowledge to a more relational or networked paradigm. My purpose is not to engage in a normative debate about this shift. Whether this is a good or bad development, only time will tell, and it is probably far too early to form any firm views on the issue, given that the Internet has only been around for 20 years and in South Africa Internet usage probably lags considerably behind that in Europe and North America where much of the debate is situated. For our purposes, it is sufficient to simply note this change as something that is indeed happening. Our question is rather what the implications of such a change may be for transformative legal education that embraces constructivist pedagogy. We noted that this pedagogy takes as a point of departure each student's own knowledge experience as the basis for learning. The question is thus what these changes mean for our understanding of our students' existing

knowledge bases as our point of departure in training a new generation of law students.

A number of recent studies have shown that reliance on electronic media, principally the Internet, for information purposes significantly alters the way that people engage with knowledge. A 2006 study found that when people read text online, they do not follow a linear method, reading from side to side and from top to bottom as one would read printed text. Rather, they quickly scan pages in a movement pattern resembling the capital letter F.<sup>81</sup> A study in 2008 concluded that the "[d]igital immersion" of the Net generation, those that grew up with the Internet, "has ... affected the way they absorb information".<sup>82</sup> Rather than reading in the traditional fashion, they "skip around, scanning for pertinent information of interest".<sup>83</sup> Yet another study has shown that people rarely spend significant periods of time on a given webpage but rather bounce in and out of pages in a matter of seconds.<sup>84</sup> It is thus not surprising that a major study by a group of researchers at University College London into the use of two research sites concluded that "there are signs that new forms of 'reading' are emerging as users 'power browse' horizontally through titles, contents pages and abstracts going for quick wins".<sup>85</sup> These changes in information behaviour are not simply changes of habit that can be undone easily by subjecting the wayward to 'correct' academic or information practices. In 2008 an experiment showed that people's brain patterns actually changed because of Internet use.<sup>86</sup> This study confirmed that knowledge experiences on the Internet result in very different areas of the brain being used than in traditional print-text reading. The changes in knowledge paradigm that the digital revolution is bringing about are thus deep-seated and fundamental.

Most of these studies and others<sup>87</sup> have also shown that digital versions of knowledge experiences are second nature to the Net generation because of their much higher level of digital immersion and the fact that they have grown up in the digital era. In short, this generation views the digital experience of knowledge as the paradigm. Prensky's metaphor of digital natives has become popular in describing this development. Digital is this new generation's native tongue. In contrast, those of us that grew up before the advent of information technology but find ourselves nevertheless also in this new digital world are but "digital immigrants"<sup>88</sup> or, as one of my older colleagues recently noted, digital refugees. We may operate in the digital world and even accept that we cannot escape it, but we will never be native speakers of the language of technology.<sup>89</sup> For

us, the linearity of the old world of printed text will always remain the paradigm and thus inform our point of departure.

From an educational perspective, and in particular a constructivist one, the real difficulty thus lies in the realisation that “[o]ur students are no longer ‘little versions of us’”.<sup>90</sup> This makes it particularly difficult for us to develop an understanding of our students’ knowledge base and their experiences of knowledge construction as prerequisites for effective constructivist teaching. The ongoing debates on and studies into the nature of knowledge construction in a digital paradigm should therefore be rich sources for developing effective teaching practices. As we have seen, this paradigm places a high premium on networked ways of thinking and the relationship between bits of information, on instant interaction and high levels of integration between different forms of engagement. It eschews linear, step-by-step approaches and the stability or permanence of information. In my view, it is imperative that we incorporate these insights into our teaching strategies in order to effectively engage our students.

But in a country such as South Africa we cannot expect that our students will share uniform levels of digital immersion.<sup>91</sup> As we strive to increasingly diversify our student body, we should expect that our students’ prior knowledge experiences, digital and nondigital, 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, which we typically assume to be part of prior learning in higher education, 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.<sup>92</sup> In most of our classes at present, I would suggest that we run both these risks.

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. The vastly different role of the teacher also becomes clear. It is no longer possible for us digital immigrants, or refugees, 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 knowledge worlds bring home the need to adopt a pedagogy that does not insist on a single correct way of doing things. As we have seen above, constructivist pedagogies offer us a methodology to capitalise on these opportunities thrown up by the challenges in a new knowledge world. But more than that, these challenges offer us opportunities to internalise the basic tenets of transformative constitutionalism in our method. As I have argued above, these shifts in teaching style align well with the shifts in our discipline necessitated by a new vision of law in South Africa.

## CONCLUSION

When we bring these insights from the three areas of legal education – our discipline, teaching and students – together, it seems to me that we have a unique opportunity, no, more than an opportunity, an obligation, in contemporary South African legal education to respond to various fundamental changes that we witness in society around us. Legal education stands at a unique crossroads in this regard. We are faced with a fundamental change in our discipline, not merely an adjustment of what was before but a paradigm shift in law and legal method; we are faced with a paradigm shift in teaching and learning, putting learning and the learner and her context at the centre, and we are faced with a paradigm shift in dealing with knowledge, moving from dominance of the printed word to digital immersion. All of these changes force us to critically reassess where we stand in legal education in relation to what is happening around us. Will we close our eyes to the paradigm shifts affecting every aspect of our craft, or will we engage with them?

In my view, all of this requires legal education to change and to change radically. But as responsible intellectuals, it is also our duty to drive that change in terms of proper theoretical frameworks. In the absence of a guiding theoretical framework, the change will amount to little more than Cockrell’s rainbow jurisprudence, rainbow education perhaps, that “flit before our eyes like

rainbows, beguiling us with their lack of substance”<sup>93</sup> and that projects a false sense of harmony where none exists or should exist. Thus, for change in legal education in South Africa to proceed responsibly, it must be grounded in theory. I believe that transformative legal education can provide us with such a theoretical framework. This framework embraces transformative constitutionalism as the guiding theory to our discipline, constructivist pedagogies as directing our teaching strategies and an acknowledgement of the advent of a fundamentally different notion of knowledge brought about by the digital revolution. Moreover, as I have attempted to show in this lecture, the theoretical insights from the three elements of legal education that I highlighted can all be aligned to the overarching aims of transformative constitutionalism. Theory is thus important in teaching law.

Transformative legal education provides us with a theoretical framework to cope with the complexity inherent in the endeavour of legal education. It allows us to acknowledge that law as a means of organising society is mired in complexity, that the process of teaching and learning is a complex one and that the new knowledge world of our networked society brings out the complex nature of knowledge rather than suppresses it. But this theoretical framework also allows us to realise that the developments in the three areas of legal education do not result in a slide to extreme relativism. The embrace of complexity in all these areas, which lies at the heart of transformative legal education, does not undermine all authority and knowledge in favour of a view that ‘anything goes’. As the late great Paul Cilliers tells us:

A complete relativist is in a way nothing but a disillusioned foundationalist. One could, however, deny the existence of absolute points of reference, without slipping into relativism. From the structuralist and post-structuralist perspective, meaning, whether conceived linguistically or socially, is generated through relationships of difference in a complex network of interaction. Meaning conceived in this way is neither arbitrary nor per definition unstable.<sup>94</sup>

In incorporating these insights from complexity theory into legal education, we have yet much to learn from Cilliers, but that is a discussion for another day.

If we are serious about societal change grounded in law in South Africa, law teachers must consciously assume their role in the transformative project. We must acknowledge that the way we go about teaching law will shape the next generation’s perception of law and its role in this country. Neil Gold states that law teachers’ “ways of behaving are metastatements about law, lawyering and justice” to our students.<sup>95</sup> He thus concludes that “[c]onsciousness about teaching makes it more likely that we will be *intentional* in respect of both content and form in our instruction”.<sup>96</sup> Seventeen years into our democracy, I think that it is high time that we as law teachers start to critically ask what we are doing in our classes to further the cause of the Constitution’s “enterprise of inducing large-scale social change through nonviolent political processes grounded in law”<sup>97</sup> towards a “society based on democratic values, social justice and fundamental human rights”.<sup>98</sup>

## ENDNOTES

- 1 This is an adaptation of the definition given by Cora Hoexter for transformative adjudication as “what judges must do in order to achieve the aims of transformative constitutionalism”. C Hoexter “Judicial Policy Revisited: Transformative Adjudication in Administrative Law” (2008) 24:2 *South African Journal on Human Rights* 281–286.
- 2 A Cockrell “Rainbow Jurisprudence” (1996) 12:1 *South African Journal on Human Rights* 1–7, drawing on PS Atiyah & RS Summers *Form and Substance in Anglo-American Law: A Comparative Study of Legal Reasoning, Legal Theory, and Legal Institutions* (1987).
- 3 Cockrell (supra) 8.
- 4 Cockrell (supra) 3, 9.
- 5 Cockrell (supra) 7.
- 6 E Mureinik “A Bridge to Where? Introducing the Interim Bill of Rights” (1994) 10:1 *South African Journal on Human Rights* 31–32.
- 7 Cockrell (supra) 10.
- 8 P Langa “Transformative Constitutionalism” (2006) 17:3 *Stellenbosch Law Review* 351–353.
- 9 KE Klare “Legal Culture and Transformative Constitutionalism” (1998) 14:1 *South African Journal on Human Rights* 146–157.
- 10 Klare (supra) 150.
- 11 Constitution of the Republic of South Africa, 1996 (“the Constitution”).
- 12 Klare (supra) 156.
- 13 Klare (supra) 168.
- 14 S Liebenberg *Socio-economic Rights* (2010) chapters 6 & 7; DM Davis & K Klare “Transformative Constitutionalism

- and the Common and Customary Law” (2010) 26:3 *South African Journal on Human Rights* 403.
- 15 Cf Davis & Klare (supra) 413.
  - 16 D Moseneke “Transformative Constitutionalism: Its Implications for the Law of Contract” (2009) 20:1 *Stellenbosch Law Review* 1; Liebenberg (supra) 358–375; Davis & Klare (supra) 468–481.
  - 17 Cf H Botha “Civic Republicanism and Legal Education” (2000) 41:1 *Codicillus* 23–31.
  - 18 See Cockrell (supra) 10.
  - 19 *Pharmaceutical Manufacturers Association of SA and Another: In re Ex parte President of the Republic of South Africa and Others* 2000 (2) SA 674 (CC) para 44.
  - 20 Cf LM du Plessis “Regsteorie in Praktyk, Regspraktyk in Teorie en Regsopleiding” (1981) *Wetenskaplike Bydraes van die PU vir CHO Reeks H: Inouguerele Rede, Nr 80* 17. On the challenges of legal pluralism in South Africa see GJ van Niekerk “Regspluralisme” in JC Bekker, C Rautenbach & MNI Goolam (eds) *Inleiding tot Regspluralisme in Suid-Afrika* (2006) 3; C Himonga & C Bosch “The Application of African Customary Law under the Constitution of South Africa: Problems Solved or Just Beginning?” (2000) 117:2 *South African Law Journal* 319; TW Bennett “Legal Anthropology and Comparative Law: Disciplinary Compromise?” (2010) 21:1 *Stellenbosch Law Review* 4.
  - 21 Klare (supra) 156, 171.
  - 22 Cf Du Plessis (supra) 3, 5.
  - 23 Klare (supra) 166–168.
  - 24 Cf M le Brun & R Johnstone *The Quiet (R)evolution* (1994) x, 57.
  - 25 Cf P Singh “Quality Assurance in Higher Education in South Africa” (2000) 14:2 *South African Journal of Higher Education* 5–6.
  - 26 Cf Botha (supra) 31.
  - 27 See DC Phillips “The Good, the Bad, and the Ugly: The Many Faces of Constructivism” (1995) 24:7 *Educational Researcher* 5; P Boghossian *Fear of Knowledge* (2006) vi.
  - 28 CT Fosnot (ed) *Constructivism: Theory, Perspectives, and Practice* 2 ed (2005) ix.
  - 29 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.
  - 30 Zietsman (supra) 73.
  - 31 Even referring to constructivism in the singular seems to be an oversimplification of the range of constructivist thought. See Phillips (supra) for a comprehensive account of the many dimensions of constructivism.
  - 32 E Venter “A Constructivist Approach to Learning and Teaching” (2001) 15:2 *South African Journal of Higher Education* 86–87.
  - 33 J Pelech *The Comprehensive Handbook of Constructivist Teaching* (2010) 8.
  - 34 Pelech (supra).
  - 35 P Cobb “Where is the Mind? A Coordination of Sociocultural and Cognitive Constructivist Perspectives” in CT Fosnot (ed) *Constructivism: Theory, Perspectives, and Practice* 2 ed (2005) 39–45.
  - 36 E von Glasersfeld “Introduction: Aspects of Constructivism” in CT Fosnot (ed) *Constructivism: Theory, Perspectives, and Practice* 2 ed (2005) 5.
  - 37 Venter (supra) 87.
  - 38 Phillips (supra) 5.
  - 39 Cobb (supra) 50–51.
  - 40 E von Glasersfeld “Why Constructivism must be Radical” in M Larochelle, N Bednarz & J Garrison (eds) *Constructivism and Education* (1998) 23–27.
  - 41 Von Glasersfeld “Why Constructivism must be Radical” (supra) 27; Larochelle & Bednarz (supra) 11; Fosnot & Perry (supra) 34; Phillips (supra) 11; Venter (supra) 91.
  - 42 Fosnot & Perry (supra) 34; Phillips (supra) 11.
  - 43 Pelech (supra) 16.
  - 44 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.
  - 45 Fosnot (supra) ix.
  - 46 Fosnot & Perry (supra) 11.
  - 47 Fosnot & Perry (supra) 11; Phillips (supra) 11.
  - 48 Phillips (supra) 10 with reference to Von Glasersfeld.
  - 49 Bitzer (supra) 100.
  - 50 Fosnot (supra) ix.
  - 51 Cf C Claassen “Outcomes-based Education: Some Insights from Complexity Theory” (1998) 12:2 *South African Journal of Higher Education* 34 35; T Field “Demystifying and Problematising the Paradigm Shift Affecting Legal Education” (2005) 16:2 *Stellenbosch Law Review* 324–331.
  - 52 Larochelle & Bednarz (supra) 11 with reference to Paul Cobb. Cf Claassen (supra) 35.
  - 53 Fosnot & Perry (supra) 34.
  - 54 Cf Phillips (supra) 11.
  - 55 Klare (supra) 166, 168.

- 56 TS Popkewitz “Dewey, Vygotsky, and the Social Administration of the Individual: Constructivist Pedagogy as Systems of Ideas in Historical Spaces” (1998) 35:4 *American Educational Research Journal* 535–550.
- 57 Popkewitz (supra) 558.
- 58 Popkewitz (supra) 558.
- 59 Popkewitz (supra) 558.
- 60 Phillips (supra) 11; Von Glasersfeld “Introduction: Aspects of Constructivism” (supra) 6, “Why Constructivism must be Radical” (supra) 27.
- 61 Popkewitz (supra) 558. Popkewitz notes the empirical research of Walkerdine that shows how “child-centered pedagogies” can privilege particular “bourgeois and gendered conceptions” of the “normalized vision of the natural child” that can lead to exclusion of those learners who do not adhere to such notions from effective education under constructivist pedagogies.
- 62 Von Glasersfeld “Introduction: Aspects of Constructivism” (supra) 6.
- 63 M Prensky “Digital Natives, Digital Immigrants” (2001) 9:5 *On the Horizon* 1.
- 64 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.
- 65 S Greenfield “The Brain of the 21st Century: From Basic Neuroscience to Social Policy” *Fifth Public STIAS Lecture* 2011, 08-06-2011.
- 66 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).
- 67 Serageldin (supra).
- 68 N Carr *The Shallows* (2010) 77, 104.
- 69 Carr (supra) 10, 76.
- 70 Carr (supra) 10.
- 71 For a fascinating illustration of this perspective, see the maps depicting the social and natural sciences as “diagrams of interactivity” rather than the traditional “taxonomies of subjects” reproduced in Serageldin (supra) diagrams 1 & 2.
- 72 Carr (supra) 90.
- 73 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](http://www.ucl.ac.uk/slais/research/ciber/downloads/ggexecutive.pdf) (accessed 15-08-2011) 8.
- 74 Serageldin (supra).
- 75 There are of course notable exceptions to this generalisation including genres such as animated novels and most children’s literature.
- 76 Serageldin (supra).
- 77 Carr (supra) 107; Serageldin (supra).
- 78 Carr (supra) 85.
- 79 Carr (supra) 106.
- 80 See Carr (supra) 96–97.
- 81 J Nielsen “F-Shaped Pattern for Reading Web Content” *Alertbox* (17-04-2006) [www.useit.com/alertbox/reading\\_pattern.html](http://www.useit.com/alertbox/reading_pattern.html) (accessed 15-08-2011).
- 82 D Tapscott “How to Teach and Manage ‘Generation Net’” *BusinessWeek Online* (10-11-2008) [www.businessweek.com/technology/content/nov2008/tc20081130\\_713563.htm](http://www.businessweek.com/technology/content/nov2008/tc20081130_713563.htm) (accessed 15-08-2011).
- 83 Tapscott (supra).
- 84 Carr (supra) 136.
- 85 University College London (supra) 10.
- 86 Carr (supra) 120-121.
- 87 M Ito et al *Living and Learning with New Media: Summary of Findings from the Digital Youth Project* (2008); OECD/CERI (supra).
- 88 Prensky (supra) 2.
- 89 Prensky (supra) 2.
- 90 M Prensky “Listen to the Natives” (December 2005/ January 2006) *Educational Leadership* 9.
- 91 A recent study even warned against the dangers of an assumption of universal access in OECD countries, OECD/CERI (supra).
- 92 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.
- 93 Cockrell (supra) 11.
- 94 P Cilliers “Complexity, Ethics and Justice” (2004) 5:19 *Tijdschrift voor Humanistiek* 19 (references omitted). Also see P Cilliers *Complexity & Postmodernism* (1998) 115.
- 95 N Gold “Foreword” in M le Brun & R Johnstone *The Quiet (R)evolution* (1994) x.
- 96 Gold (supra) x (emphasis in original).
- 97 Klare (supra) 150.
- 98 Preamble of the Constitution.