

A failure by any other name: The phenomenon of underpreparedness

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Abstract

This study presents an analysis of the performance of students from disadvantaged schools (DS) on first-year psychology examination questions. The analysis focuses on the process of enquiry that underpins different kinds of questions (factual, relational and conceptual) of increasing levels of difficulty. The findings indicate that success or failure is not simply a measure of the reproduction of content but is a function of the (in)appropriate *form* of responses that students generate in engaging with different kinds of questions. This has important implications for the conceptualisation of academic literacy and the development of responsive curricula in the South African higher education context. In order to further understand the reasons for the disproportionately high failure rate among students from disadvantaged schools, the responses of DS failing students are compared to those of their peers from advantaged schools (AS) who also failed the course. This comparative analysis reveals very different patterns of questioning engagement among the two failing groups of students, providing empirical support for the argument that *underpreparedness* is a distinct systemic phenomenon rather than simply failure by another name.

Introduction

The disreputable history of apartheid education and the consequence that students from certain sectors of that unequal system were deliberately underprepared for university study has been well documented.^{1,2,3,4,5} More recently, with the first matriculation examination based on the OBE system in 2008 and the introduction of the National Benchmark Testing project in 2009,^{6,7,8} the effects of these intractable inequities in the schooling system post-1994 are again the focus of both pedagogical and political debate. It is clear that South Africa's enduring unequal schooling system creates multiple layers of disadvantage that require redress, such as the low level of skill and training among teachers, inadequate infrastructure and paucity of equipment and books. In addition, learning through the medium of a second language clearly is a further factor that places learners at a disadvantage. These inequities can be expressed succinctly as a 'lack of access' to successive educational levels whereby a disproportionately small number of Black African students exit the school system with results that qualify them for entry to higher education. This differential selectedness⁹ presents a serious challenge to universities that, on the one hand, assert the values of access based on merit and, on the other hand, understand that education is itself a major conduit for social transformation.

The National Benchmark Testing project (commissioned by Higher Education South Africa and developed at the Centre for Higher Education, University of Cape Town) aims to provide an independent assessment of school leavers' competencies in the core areas of mathematics (and maths literacy) and academic literacy, competencies that are understood as foundational for higher education. The term *academic literacy*, unlike its negative inverse *academic underpreparedness*, manages to camouflage the fact that the term is used largely in the context of something that some students lack and need to develop in order to succeed at university. But the advantage of the term *academic literacy* is that, although it remains a name for an undisclosed phenomenon much like the descriptive label of *underprepared*, it points towards the more familiar terrain of literacy and the assumption that access to accumulated bodies of knowledge is an automatic outcome of being able to read at successive levels of difficulty. However, it is evident that the instructional task of university study entails something more fundamental than the teaching of surface-level literacy, such as reading or writing techniques or the development of linguistic fluency in English. Although these skills are certainly necessary for the development of academic literacy,^{10,11} it is widely recognised that they are not sufficient to account for the difficulties experienced by both learners and teachers in the higher education sector.^{12,13,14} The process of education needs to equip prospective university learners to enter the distinctively discursive world of

academia^{15,16} by providing what Morrow^{17,18} has termed ‘epistemological access’ or creating what Bourdieu and Wacquant¹⁹ term ‘cultural capital’.

This way of framing the learning–teaching task of university study shifts the focus from the *content* of what is learnt and taught to the *form* of knowledge construction. While academic study obviously entails becoming familiar with historically established disciplinary content, the development of critical forms of analysis and argument are of even greater importance if students are to emerge from their studies as independent thinkers who are able to contribute to the world of knowledge. In the social sciences, these form demands are essentially textual^{20,21} and, therefore, are underpinned by particular epistemic assumptions. Ströhm-Kitchener²² refers to the contextually relative (rather than ‘true’ in all places and at all times) nature of knowledge claims in the social sciences and their development through antithetical or dialectical movement (rather than in a linear cumulative fashion). Appropriate engagement in the practices of academic enquiry requires that these assumptions are shared and understood by students. It is this ‘unsaid’ epistemology that enables knowledge to be interpreted and evaluated, and that sustains the openness or suspension of closure that Gadamer²³ emphasises in relation to the interpretation of texts.

This world of knowledge construction, rather than knowledge reproduction, may be very foreign territory for those for whom prior learning has occurred in contexts governed by quite different rules and assumptions about knowledge. In this context, the rote-learning approach is still typical of much schooling²⁴ and is premised on commonsense epistemologies that assume that unquestionable truths may be discovered by direct personal experience or by reference to authoritative sources.² In these terms, the difficulties that underprepared students experience are construed as rooted in inappropriate epistemic assumptions and, hence, inappropriate questioning engagement with presented tasks. The question-and-answer mode of academic discourse in general and of academic assessment and evaluation, in particular, is not only, or even primarily, about the reproduction of particular content in an acceptable linguistic style but is also about playing by the *rules of the game* in which the question is a provocation to shape a particular form of enquiry. Where students and teachers share these discursive rules or epistemic assumptions, students will read and interpret a question within the framework intended by the teacher (examiner) and will construct their answers in terms of this shared framework. However, where the underlying epistemological assumptions that define the rules or shape the framework differ, students may transform the task in line with their own frameworks of knowledge, thereby answering another question altogether.²⁵

Consequently, this study proposes that our understanding of the issues of ‘academic literacy’ and ‘underpreparedness’ that impact on the problems of access and success, may be extended by shifting attention from a focus on the (in)adequacy of students’ answers to the underlying process of enquiry or questioning that generates these products. This approach is premised on the assumption that an appropriate response to an academic question entails not only the recall of particular information but a critical engagement with the field of enquiry that the question represents. The process of constructing knowledge may be described as a progression through a series of questions and answers.²⁶ However, the apparent stasis conveyed by ‘statements of fact’, belies this developmental process: ‘The aim of raising problems is to find their solution; they are, therefore, never mentioned and disappear at the level of what is explicit’²⁷. However, it is precisely the implicit epistemic assumptions¹⁷ that constrain the tasks of the social sciences that students must share and understand. An investigation of the sociohistorical construction of both university task demands and the cognitive functioning of students provides a theoretical framework for understanding academic literacy and underpreparedness as a function of the differential learning experiences of advantaged and disadvantaged students.

The pervasive theoretical difficulty with concepts like academic literacy and underpreparedness is that the empirical marker or index of the phenomenon, academic performance, provides no clue to, let alone an explanation of, its genesis. In this respect, it is like a temperature reading that refers to the manifest property of a thermometer but without providing any indication of the source of the heat process that generates the thermometer reading. This is a common problem with psychological concepts and is often expressed in the opposition between competence (process) versus performance (product) differences. As Vygotsky²⁸ pointed out many years ago, conflating these levels of analysis leads to serious misunderstandings because the same manifest phenomenon, such as poor academic performance, may have different causes or be generated by different underlying processes. For this reason, it is necessary for psychological explanations to trace the links between the specific processes that generate the performance in question. To this end, the present study attempts to show that failure on an academic task may be attributed to very different causes and, therefore, demands quite different educational responses. Laziness, a lack of aptitude and the absence of commitment may of course lead to poor academic performance. However, this truism cannot simply be inverted to imply that poor academic performance is indicative of these ‘causes’. The concept of underpreparedness provides an alternative ‘explanation’ suggesting that the origins of academic failure may be quite differently located in sociohistorical processes rather than in individual dispositions.

Methods

Methodological framework

Despite the broad antithesis typically established between quantitative and qualitative approaches, many studies (including this current one) incorporate both kinds of analyses. Morrow and Brown²⁹ claim that, contrary to the conventional approach in which qualitative work is treated as a kind of preliminary pilot phase to be extended to broad statistical analyses and generalised claims, the proper relation between quantitative and qualitative work is for the quantification of general trends or patterns in the data to provide a heuristic basis for further interpretive analysis. This study presents broad quantitative trends or *patterns* of performance as the basis from which to further qualitatively elaborate the form of academic questioning and the concomitant implications for learning and teaching. Establishing empirical patterns with the potential to generate fresh insights into students’ engagement necessitates a rigorous theoretical formulation of categorisation. The creation of a taxonomy of question types shifts the interpretive focus from students’ answers (products) to the questioning processes that underpin their production. Three kinds of questions³⁰ were identified: factual, relational and conceptual, and are elaborated here to frame the presentation of empirical data.

Factual questions

Despite the emphasis in academic teaching–learning on developing critical enquiry or the skills of argument, the assessment of students continues to test factual knowledge and, indeed, substantially rewards the reproduction of relevant facts.^{31,32,33,34} A parallel analysis of epistemological developments reveals that despite postmodern pessimism about the possibilities for progress in knowledge, the processes of deconstruction and postmodern *play*, far from being independent of historical trajectories of enquiry and the *facts* delivered by these histories, are premised upon them.^{35,36,37} The mechanistic recall of isolated facts may reveal little about the processes that we typically refer to as *understanding* and the development of collective bodies of knowledge clearly entails far more than the simple accumulation of bits of information. The facts that we know and can use in daily life, and the facts about which students are questioned in academic study, are embedded in complex inter-related rule-governed networks.³⁸

Although factual questions place lower organisational or structural demands on respondents in the construction of answers (see discussion below), they nonetheless require selectivity and comprehensiveness

that cannot be accomplished without some measure of organisation in both the storage and recall of information. The decontextualisation typical of all formal schooling and epitomised in tertiary study removes the immediate relevance of knowledge from the world of lived experience. However, the world of academic study creates a self-reflexive context within which new (hierarchical) relations of meaning and relevance (or relatedness) are established. The fields of factual information with which students must engage at university are characterised by surplus and plurivocity and the questioning process, therefore, makes high selectivity demands. In contrast, in the context of the inadequate schooling of the past, the selection of facts was accomplished not by the learner, but by the curriculum (including an authoritative teacher figure) on the learner's behalf.

Relational questions

The formulation of knowledge in the social sciences as contextually relative²² entails a recognition that facts are contingent rather than inherently valid. Relational questions require that respondents pursue and articulate the nature of such contingency, and the networks whereby particular facts support or contradict one another or constrain possible explanations of phenomena. As argued above, even factual questions assume some notion of the relations between particular facts and a sense of what makes them cohere as a delimited field of information. However, relational questions centre the enquiry process on the form of connectivity that creates this coherence, requiring the delineation of the structure of these relations. The process of selective recall of facts is assumed to be both accurate and comprehensive but secondary to establishing the nature of relations between the particular facts marshalled in response to a line of enquiry. To employ the language of deconstruction, it is the 'play of difference' between them rather than the facts themselves that generate our understanding.

The task, therefore, is construed as elaborating the way in which bodies of information are organised or integrated to form an understanding of a particular phenomenon. Relations may take a variety of forms, e.g. opposition or support; cause and effect; dialectics of mutual construction; necessity or, at least, correlation and coincidence; and part-whole hierarchies. Appropriate engagement with this kind of question requires arguing for the necessary or inevitable form of this connectivity and the conclusions that it allows us to reach. The question of how various elements relate to one another and combine to form a particular explanation or theory may be thought of as analogous to selecting a means of travel between places and tracing the possible routes, specifying distance and direction between them. The task in pursuing a relational question is the development of these relational 'routes' arguing for a particular kind of relationship between ideas (facts) by treating them as elements of a whole, rather than isolated entities.

Conceptual questions

New trajectories in the construction of knowledge are not developed in a vacuum but constrained and made possible by preceding lines of enquiry. The 'appropriation'³⁹ of these prior worlds of knowledge entails developing control over the discursive conventions of a particular field. The social sciences are typically extended by the redeployment of old language for new purposes (e.g. *perfection* in Darwinian theory or *conservation* in Piagetian theory). Alternatively, new terms are coined for reconceptualising phenomena that have come to be taken for granted (e.g. *intertextuality* or *conceptual frameworks* for re-describing and explaining the spontaneous and nonconscious activities of learning from others). New language distances us from familiar realities, creating uncertainty and placing the world in question. Conceptual questions require the definition and manipulation of these specialist theoretical terms, demonstrating the mobilisation of new ways of thinking and, moreover, an appreciation of the peculiar simultaneity of openness and closure characteristic of textual discourse. Appropriate engagement with this kind of question recognises that the questions raised in the social sciences are premised on the possibility of questioning even those aspects of

reality that appear unquestionable. Pursuing this kind of study means placing the world of familiar human activity under scrutiny or in question. Further, language itself is recognised as questionable and open to multiple interpretations. Hence, a conceptual question provokes the exploration of a particular concept within a theoretical field and the demarcation of shared definitions in order to conceive of human or social phenomena in a particular way rather than in some other way.

Subjects

The subjects for this study were drawn from a first-year psychology class at the (then) University of Natal, Durban, South Africa. Given the context of racialised inequities in the South African schooling system, students from township and rural schools may be identified as systemically disadvantaged in several important respects on entry to university. This is not to suggest that students from disadvantaged schools (DS) are *necessarily* underprepared for university study; some students from such schools are high performers and some schools from this sector produce exceptional cohort results against the odds.⁴⁰ However, this should not obscure the fact that these schools remain systemically disadvantaged and under-resourced both in terms of material and human resources. Further, it should be noted that this label connotes multiple layers of disadvantage. In the 1990s when these data were collected, this label inevitably meant that these students were disadvantaged by the intersectionalities of race and class in their social positioning and, in particular, by studying in English as a second language, rather than in their mother tongue which, in this context, was predominantly isiZulu. The label ‘disadvantaged schooling’ prioritises *schooling* as the primary contributory factor in preparing students for higher education. It is the performance of these DS students ($n = 277$) that forms the focus of this study. The failure rate for this group of students from disadvantaged schools was extraordinarily high (51%) compared to that of the other students in the class (18%). Failing students from advantaged schools (AS, $n = 74$) provided a comparative subject group for further analysing the dynamics of failure. Table 1 presents the profile of the subjects of the study with respect to home language, home location, gender, age and matric point scores.

The profile of DS students was different in a few respects to that of their failing AS counterparts: many more DS students came from rural backgrounds, on average they were slightly older and also, on average, had lower matric points. However, these indicators of difference provide little more than a description of disadvantage and it is worth noting that the highest matric point scores among the DS students were comparable with the highest scores for AS students (suggesting that these scores have little explanatory or even predictive value).

Materials

Students’ task engagement was analysed in response to firstyear psychology examination questions. These questions were of the same form as tasks conducted in tutorials throughout the psychology course and are typical of academic questions in the social sciences, in general. The questions that are the focus of this study constituted half of the final examination, the other half being multiple choice questions covering the same content areas. Final performance on the course is, therefore, a composite score across these two different kinds of assessment in the examination, as well as a coursework mark derived from assessment on tutorial tasks, essays and tests. The research focused on the open-ended questions of the examination paper but also evaluated this engagement in relation to students’ final success or failure in the course as a whole. The questions in this examination paper addressed the different content areas of the course: introduction to psychology, evolution, intelligence and forms of knowledge. More importantly, the questions also varied in terms of the form demands made and could be categorised in terms of the kinds of questions elaborated upon above: factual, relational and conceptual.

Factual question

EITHER draw a diagram that summarises Piaget's theory of intelligence OR write a summary discussion of Piaget's theory of intelligence.

Relational questions

- Discuss the relationship between the content and form of the discipline of psychology.
- Compare Darwin's theory of evolution through natural selection with the earlier theories of Cuvier and Lamarck.

TABLE 1: The profile of all students from disadvantaged schools (DS-All) and that of failing students from advantaged schools (AS-Fail) who wrote the firstyear psychology examination.

Characteristic	DS-All students ($n = 277$)	AS-Fail students ($n = 74$)
Gender		
Female	196	54
Male	81	20
Home location		
Urban	164	71
Rural	113	3
Age (years)		
Range	17 – 55	18 – 26
Mean	23	19
Matric points		
Range	5 – 40	16 – 41
Mean	25	29

Conceptual questions

- Give two reasons why the natural process of adaptive change does not lead to perfection. Illustrate each of these reasons with an example.
- Define the concept of 'g' and explain its significance in the construction of models of intelligence.
- Discuss the constructed nature of knowledge in the social sciences in terms of the concepts of intertextuality, conceptual frameworks and theory-laden facts.

Data analysis

In order to go beyond a restatement of the truism that academic difficulties are rooted in the inequalities of schooling, an explanation needs to account for failure (and by implication, success) in conceptual terms if it is to contribute to innovation and development in the learning–teaching process. To this end, the construction of the framework of question types delineated above creates a new perspective for analysis. Students' engagement with the given questions was assessed in general terms as *appropriate* or *inappropriate*. Appropriate responses indicate that, for these students, the given question provides sufficient impetus for the student to engage with the appropriate area of debate. The questioning framework of the student is evidently in line with that which underpins the particular presented question. It is important to note that an answer categorised as *appropriate* in terms of engaging with the given question may not necessarily be a *good* answer in conventional terms. It is possible to answer a question poorly (for example, provide insufficient or incorrect factual information, or misunderstand the precise nature of relations between different elements of a system)

but, nevertheless, demonstrate an understanding of the given questioning parameters. It is not unusual to encounter very well-written essays with a minimum of content in which students, often successfully, manage to conceal their lack of knowledge about a topic by invoking an ‘academic mode’ of writing about very little. Similarly, responses deemed *inappropriate* are not simply equated with poor or inadequate answers. Rather, inappropriate responses are those that typically elicit the exasperation of academics and responses such as, ‘You have not answered the question!’ or ‘Irrelevant!’ Such responses have little learning–teaching value but point to a distinction that is often intuitively made between the form and content that students must master in becoming competent within a domain of study. Analysing the patterns of student responses as appropriate or inappropriate in relation to different kinds of tasks shifts our attention from the content to the embedded form of academic enquiry and to the process of knowledge construction in the social sciences. Comparison of the performance of DS students across different performance categories with the performance of their failing AS counterparts enables further conceptualisation of the phenomenon of underpreparedness and offers potential insights for the development of responsive curricula.

TABLE 2: Frequency (f), weighted frequency (fw), and percentage (%) of appropriate and inappropriate responses from students from disadvantaged schools (DS) across all performance categories (Fail, Pass, High) and failing students from advantaged schools for factual, relational and conceptual questions.

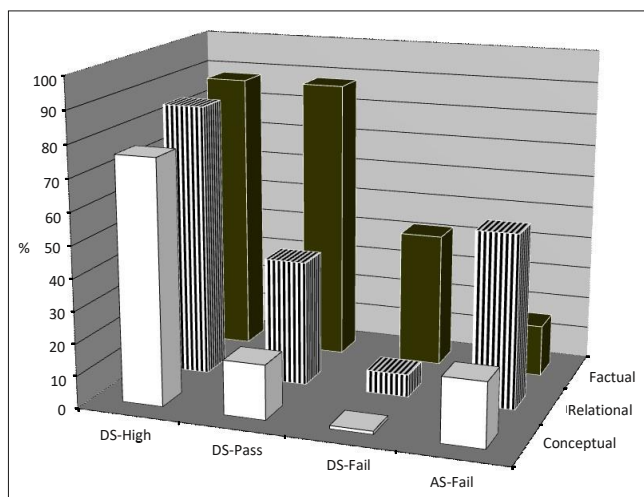
Responses	Disadvantaged Schools									Advantaged Schools			Total f
	High			Pass			Fail			Fail			
	f	fw ^a	%	f	fw ^a	%	f	fw ^a	%	f	fw ^a	%	
Factual question (1)													
Appropriate	25	0.10	88	78	0.30	88	68	0.17	42	23	0.04	16	194
Inappropriate	8	0.01	12	25	0.04	12	71	0.24	58	46	0.20	84	150
Total	33	0.11	100	103	0.34	100	139	0.41	100	69	0.24	100	344
No response	0	-	-	0	-	-	2	-	-	5	-	-	7
Total f	33	-	-	103	-	-	141	-	-	74	-	-	351
Relational questions (2)													
Appropriate	41	0.12	85	72	0.12	39	44	0.03	7	62	0.12	54	219
Inappropriate	25	0.02	15	132	0.18	61	234	0.41	93	85	0.10	46	476
Total	66	0.14	100	204	0.30	100	278	0.45	100	147	0.22	100	695
No response	0	-	-	2	-	-	4	-	-	0	-	-	6
Total f	66	-	-	206	-	-	282	-	-	147	-	-	701^b
Conceptual questions (3)													
Appropriate	39	0.12	76	44	0.05	17	15	0.00	1	33	0.04	20	131
Inappropriate	55	0.04	24	248	0.25	83	374	0.43	99	167	0.17	80	844
Total	94	0.16	100	292	0.30	100	389	0.43	100	200	0.21	100	975
No response	5	-	-	17	-	-	34	-	-	22	-	-	78
Total f	99	-	-	309	-	-	423	-	-	222	-	-	1053^c

^aThe formula for obtaining the weighted frequencies is illustrated in relation to the first cell (DS-High) for appropriate responses to factual questions. The number of appropriate responses by DSHigh students to the factual question (25) was divided by the total number of responses by this group of students to this question type (33), then multiplied by the number of DS-High appropriate responses (25) divided by the total number of appropriate responses to the factual question across all performance groups (194). This

yielded the weighted score of 0.1 that takes into account what proportion of BOTH groups (appropriate) and (high) this particular sub-group’s ‘high-appropriate’ responses represents. ^bA total of 701 (554 L2 and 147 L1) responses were recorded for relational questions, i.e. 351 (277 L2 and 74 L1) students responding to two questions. ^cA total of 1053 (831 L2 and 222 L1) responses were recorded for conceptual questions, i.e. 351 (277 L2 and 74 L1) students responding to three questions.

Results

For the purposes of this analysis, three groups of DS students were identified based on their final overall performance on the first-year course: DS-Fail (less than 50%: $n = 141$); DSPass (50% – 59%: $n = 103$); and DS-High (60% or higher: $n = 33$). The pattern of questioning engagement of these groups was compared with that of AS-Fail students (less than 50%: $n = 74$). For each of the performance categories, the frequency (f) of appropriate and inappropriate questioning engagement is provided in Table 2 for each of the kinds of questions (factual, relational and conceptual). Because there were unequal numbers of questions in these categories (one factual question, two relational questions and three conceptual questions) and because the performance groups were not equal in size (in particular, there were relatively few students in the DS-High category), comparisons across groups was problematic. Any comparison across performance groups needed to take into account the proportion of the total cohort that a particular group represented, i.e. be weighted. The weighted proportions (fw) in relation to total responses within the group (i.e. total responses by failing, or



DS, students from disadvantaged schools; AS-Fail, failing students from advantaged schools.

FIGURE 1: Percentage of appropriate responses from DS-High, DS-Pass, DSFail and AS-Fail students across all question types (factual, relational and conceptual).

passing, or high-performing students) and in relation to total responses across the categories of questioning engagement (appropriate or inappropriate) are presented in Table 2. Based on these weighted scores, the percentages of appropriate and inappropriate responses for each performance category and for each of the factual, relational and conceptual questions are given in Table 2. Non-responses were dropped from the weighted data as the focus was on the nature of responses. However, it is interesting to note that a substantial number ($n = 56$) of non-responses were recorded across performance groups for ‘conceptual’ questions. The pattern of appropriate responses for each performance category of students across question types is presented in Figure 1.

A question of success or failure: DS students' engagement

It is evident from Figure 1 that appropriate questioning engagement is strongly related to final performance levels. A very high proportion of the DS-High group's responses were appropriate across all question types (88% for factual, 85% for relational and 76% for conceptual questions). The appropriate engagement of passing students was the same as that of high performers for the factual questions (88%) but dropped substantially for the other kinds of questions (39% for relational and 17% for conceptual). There was a very small proportion of appropriate responses from the failing students for the relational (7%) and conceptual (1%) questions and a low proportion (42%) for the factual question. Clearly, for the weaker students, the kind of question posed had a strong bearing on appropriate engagement.

The questioning engagement of the DS-High students was predominantly and consistently appropriate regardless of the specific demands of different kinds of questions. In contrast, the *pattern* of responses across the kinds of questions for DS-Pass and for DS-Fail students was very similar, varying with question type: highest for factual, lowest for conceptual and intermediate for relational. The difference between the DS-Pass and DS-Fail students was quantitative rather than qualitative with the failing students producing relatively fewer appropriate responses for each of the question types.

Comparative failure: AS students' engagement

The pattern for the AS-Fail students was distinctly different from the three DS performance groups with the lowest percentage of appropriate responses occurring for the factual question and the highest for the relational questions. This poor performance of the AS-Fail students on the factual question probably accounts for their failure overall and probably indicates that these students simply did not study sufficiently for the examination, the most common and universal reason for failure. In sharp contrast, the demands of the factual question were easiest for DS-Fail students and appropriate engagement by DS-Pass students in response to factual questions was equal to that of the DS-High students.

A comparison between the DS and the AS-Fail students also reveals very different patterns of engagement for the relational and conceptual questions. The pattern of engagement for the AS *failing* students more closely resembles that of the DS *passing* students (and is even marginally better). In response to relational questions, only 7% of DSFail students produced appropriate responses compared to 54% of AS-Fail students and 39% of DS-Pass students. The pattern was similar for conceptual questions. Almost no DSFail students (1%) compared to 20% of AS-Fail students and 17% of DS-Pass students, were able to engage appropriately with the demands of these questions. The factual question was the only instance where the performance of the AS-Fail students (16%) fell well below the performance level of the DS-Pass students who, like the DS-High students, produced 88% appropriate responses. It is apparent from these data that AS and DS students are failing for different reasons and that a particular kind of inappropriate engagement with the questioning process that underpins academic tasks appears to distinguish *underprepared* students, not only from successful DS students, but also from failing AS students.

Discussion

The results of this study provide empirical grounds for the conclusion that different kinds of questions present different levels of difficulty. These levels of difficulty appear to be associated with the degree to which task demands are concealed by the question type. Although the demands of factual questions are the most overtly stated and, ostensibly, most similar to previous tasks encountered by students in their schooling, a substantial number of students still misconstrued the demands of such questions. Relational questions pose greater difficulty and appropriate engagement with these kinds of questions is characteristic only of the highest performing students. Although nearly half the passing group were able to grasp the requirements of this sort of question, appropriate engagement with relational questions was almost non-existent among failing students.

This pattern is further exaggerated for conceptual questions, which were the most difficult of the question types.

These results suggest that the reasons for the high failure rate and generally low performance among DS students may not only be a consequence of the extent of their knowledge of the content of the course. Despite extensive study and preparation of material on the part of DS students, poor performance may nevertheless result due to misunderstandings of the peculiar demands of academic questioning and the way in which these questions take for granted the largely unarticulated epistemic framework of the social sciences. This finding has significance for the design of responsive curricula, suggesting that what students need is not *more* content from which to construct their answers but new modes of questioning.

A comparative analysis of the engagement of DS students with their AS counterparts provides evidence for the claim that underpreparedness is a distinctive phenomenon and that the reasons for failure are not the same for all students. When the responses of failing AS students are analysed in terms of whether they address the given question or produce mental transformations of the question, their pattern of engagement is distinctly different to that of their DS-Fail counterparts. On relational and conceptual questions, the proportion of AS-Fail students who produced appropriate responses was far higher than among DS-Fail students, resembling and even out-performing the DS-Pass group (Table 2 and Figure 1). The pattern of engagement for AS-Fail students is almost identical to that of their DS-Pass and DS-High peers in terms of the proportion of appropriate responses to relational questions (Table 2). This suggests that these AS-Fail students have an understanding of the requirements of the task that is comparable to that of DS-Pass students. Very few DS-Fail students, on the other hand, responded appropriately to relational questions (7%, Table 2). The pattern of engagement on the conceptual questions was similar except in so far as these questions differentiated even more starkly between high performers and those who just managed to pass the course. However, the profile of AS-Fail students is again similar to the DS-Pass group rather than to their failing DS counterparts. These findings strongly suggest that the underlying reasons for failure among AS and DS students are different in kind.

However, the pattern of engagement with the factual question differs markedly from the other question types. In response to this kind of question, the majority of DS-Pass students (88%) engaged appropriately and were undifferentiated from their DS-High peers. In contrast, the comparative performance of AS-Fail students was weakest of all on the factual question; only 16% of AS-Fail responses were appropriate, lower than even DS-Fail students among whom 42% of responses to the factual question were appropriate (Table 2 and Figure 1). Perhaps, AS-Fail students assumed that the apparently simple factual question concealed a more typically *critical* academic question or, perhaps, this was simply an attempt to demonstrate that in the absence of knowing the material, they were able to substitute *form* in place of *substance*.

It should be noted, however, that although the proportion of appropriate engagement among DS-Fail students was substantially higher for the factual question than for the relational and conceptual questions, and higher than among their AS-Fail counterparts, it remains lower than that of the DS-Pass and DS-High groups. The equivalent high level of appropriate engagement for these two groups of students for factual question types, indicates that the final overall performance difference between these two groups is a result of their engagement with relational and conceptual question types. Conversely, DS-Pass and AS-Fail students displayed similar questioning engagement profiles for relational and conceptual questions whereas the AS-Fail students performed poorly in response to the easier demands of the factual question. This suggests that the poor performance of AS students is not related to questioning engagement whereas this remains the distinguishing feature of failure among DS students. The significance of this finding is that it provides the grounds for distinguishing between different kinds of academic failure, in particular, failure associated with lack of

motivation, laziness, or aptitude for academic work, from the systemic disadvantageous effects of inadequate or inappropriate schooling.

Conclusion

It is evident from this study that different kinds of academic questions create different kinds of intellectual or cognitive demands and levels of difficulty. Perhaps, because of a measure of continuity with school tasks, factual questions present the lowest level of demand or difficulty for students and most passing students demonstrate appropriate engagement with this kind of question. However, it is worth noting that the majority of failing students do not display the requisite questioning frame for factual questions, suggesting that although these questions may be continuous with the factual engagement typical of prior schooling, there is a qualitative shift in the requisite skills of selection and organisation for appropriate engagement with tertiary level academic tasks. Relational and conceptual questions present greater demands on all students, with a conceptual form of enquiry most difficult of all. This analysis suggests that underpreparedness may be understood as a function of questioning engagement rather than simply as a deficit in individual students with respect to particular content domains. Both instructional processes and forms of assessment need to proceed from this understanding in order to engage with the development of the appropriate modes of academic enquiry.

The findings of the comparative analysis of AS and DS students' questioning engagement support the contention that the learning difficulties of students from disadvantaged schools do not correspond with the usual explanations offered for failure. Rather, these students demonstrate a kind of task engagement that is inappropriate for the embedded questioning framework of the social sciences. 'Underpreparedness', then, is not simply a failure, or lack of aptitude, on the part of individual students but rather reflects a systemic failure by the educational system to initiate these students into the world of academic study and its implicit rules of enquiry and knowledge construction. The potential to bridge this disjuncture, therefore, becomes the task of educational intervention. Effective mediation of the demands of academic literacy must not only take cognisance of students' failure to engage appropriately but must also proceed on the basis of an understanding of the kinds of requisite cognitive functions that are required for successful task engagement. Understanding that academic tasks may require an alternative questioning epistemology, opens up possibilities for un-learning⁴ and, hence, for teaching new forms of engagement.

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References

1. Bradbury J. Cognitive functioning in a questioning engagement with textuality. *J Cognit Educ*. 1997;6(1):115–125.
2. Craig AP. Adult cognition and tertiary studies. *S Afr J High Educ*. 1991;5(2):137–144.
3. Kallaway P, editor. *The history of education under apartheid 1948–1994: The doors of learning and culture shall be opened*. New York: Peter Lang; 2002.
4. Miller R. Conceptual issues in theorising about cognition. *S Afr J High Educ*. 1989;3(1):154–159.
5. Molobi E. Academics and the struggle for a democratic education. In: Flanagan W, Hemson C, Muller J, Taylor N, editors. *Vintage Kenton. A Kenton association commemoration 21*. Cape Town: Maskew Miller Longman, 1994; p. 103–109.
6. Gower P. Matric boss quits. *Mail and Guardian* 2009 Oct 12.
7. Malala D. Universities aim for both access and success. *Mail and Guardian* 2007 Jan 29.
8. Paton C. Out for the count. *Financial Mail* 2009 Aug 28; 39–41.
9. Bourdieu P, Passeron JC. *Reproduction in education, society and culture*. London: Sage; 1977.

10. Boughey C. Multiple metaphors in understanding of academic literacy. *Teachers and Teaching*. 2000;6(33):279–290. doi:10.1080/713698740
11. Boughey C. From equity to efficiency: Access to higher education in South Africa. *Arts Humanit High Educ*. 2003;2(1):65–71. doi:10.1177/1474022203002001006
12. Hlalele DJ. Do learning skills acquired in the university access programme enhance participation in academic practice? *S Afr J High Educ*. 2010;24(1):98–110.
13. Jacobs C. Mainstreaming academic literacy teaching: Implications for how academic development understands its work in higher education. *S Afr J High Educ*. 2007;21(7):870–881.
14. Yeld N. Critical questions? Some responses to issues raised in relation to the national benchmark tests project. *S Afr J High Educ*. 2007;21(5):610–616.
15. Northedge A. Enabling participation in academic discourse. *Teach High Educ*. 2003;8(2):169–180. doi:10.1080/1356251032000052429
16. Williams K. Lecturer and first year student (mis)understandings of assessment task verbs: ‘Mind the Gap’. *Teach High Educ*. 2005;10(2):157–173. doi:10.1080/1356251042000337927
17. Morrow W, King K. *Vision and reality: Changing education and training in South Africa*. Cape Town: UCT Press; 1998.
18. Morrow W. *Bounds of democracy: Epistemic access in higher education*. Pretoria: HSRC Press; 2009.
19. Bourdieu P, Wacquant LJD. *An invitation to reflexive sociology*. Chicago and London: University of Chicago Press; 1992.
20. Bradbury J, Griesel H. Text as impetus for learning. In: Adey D, Steyn T, Herman N, Scholtz G, editors. *State of the art in higher education*. Conference proceedings of the SAARDHE Congress. Pretoria: UNISA, 1994; p. 323–331.
21. Hardman J, Ng’ambi D. A questioning environment for scaffolding learners’ questioning engagement with academic text: A university case study. *S Afr J High Educ*. 2003;17(2):139–146.
22. Ströhm-Kitchener K. Cognition, meta-cognition, and epistemic cognition. *Hum Dev*. 1983;26:222–232.
23. Gadamer H. *Truth and method*. London: Sheed and Ward; 1975.
24. Moll IC, Slonimsky L. Towards an understanding of cognition in the academic support context. *S Afr J High Educ*. 1989;3(1):160–166.
25. Bradbury J. *The questioning process in the development and production of knowledge*. PhD thesis, Durban, University of Natal, 2000.
26. Meyer M. The revival of questioning in the twentieth century. *Synthese*. 1988;74:5–18. doi:10.1007/BF00869616
27. Meyer M. Science as a questioning process: A prospect for a new type of rationality. *Rev Int Philos*. 1980;34:59.
28. Vygotsky LS. *Mind in society: The development of higher psychological processes*. Cambridge: Harvard University Press; 1978.
29. Morrow RA, Brown DD. *Critical theory and methodology*. London: Sage; 1994.
30. Miller R, Bradbury J, Wessels S. Academic performance of first and second language students: Kinds of assessment. *S Afr J High Educ*. 1997;11(2):70–79.
31. Miller R. Mark my words, part 1: Teachers. *S Afr J High Educ*. 1996;10(2):13–24.
32. Paxton M. Tutor responses to student writing. *S Afr J High Educ*. 1995;9(1):189–198.
33. Sparks RS. An analysis of an assessed written examination. *S Afr J High Educ*. 1998;2(2):78–93.
34. Van Staden WJ. Constructing and marking (assessing) examination questions with special reference to the subjective-type questions. *S Afr J Afr Lang*. 1993;13(2):32–37.
35. Bertens H. *The idea of the postmodern*. London: Routledge; 1995. doi:10.4324/9780203359327
36. Eagleton T. *After theory*. London: Penguin; 2003.
37. Latour B. *We have never been modern*. London: Harvester Wheatsheaf; 1993.
38. Pinker S. *How the mind works*. London: Penguin; 1997.
39. Ricoeur P. *Hermeneutics and the human sciences*. Cambridge: Cambridge University Press; 1981.

40. Top 100 schools survey. Sunday Times 2009 Oct 18.
