

Equity, knowledge and power in South Africa in three phases: A maths education researcher perspective

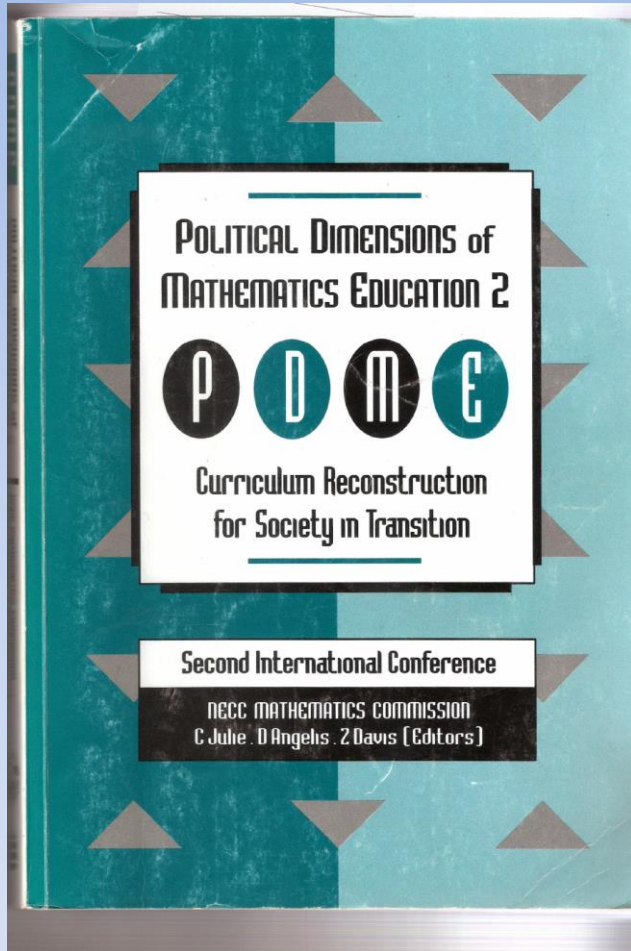
Panel presentation:

Transforming society and mathematics education
in South Africa

Jill Adler, Wits & KCL

MES7, Cape Town, 2 March 2013

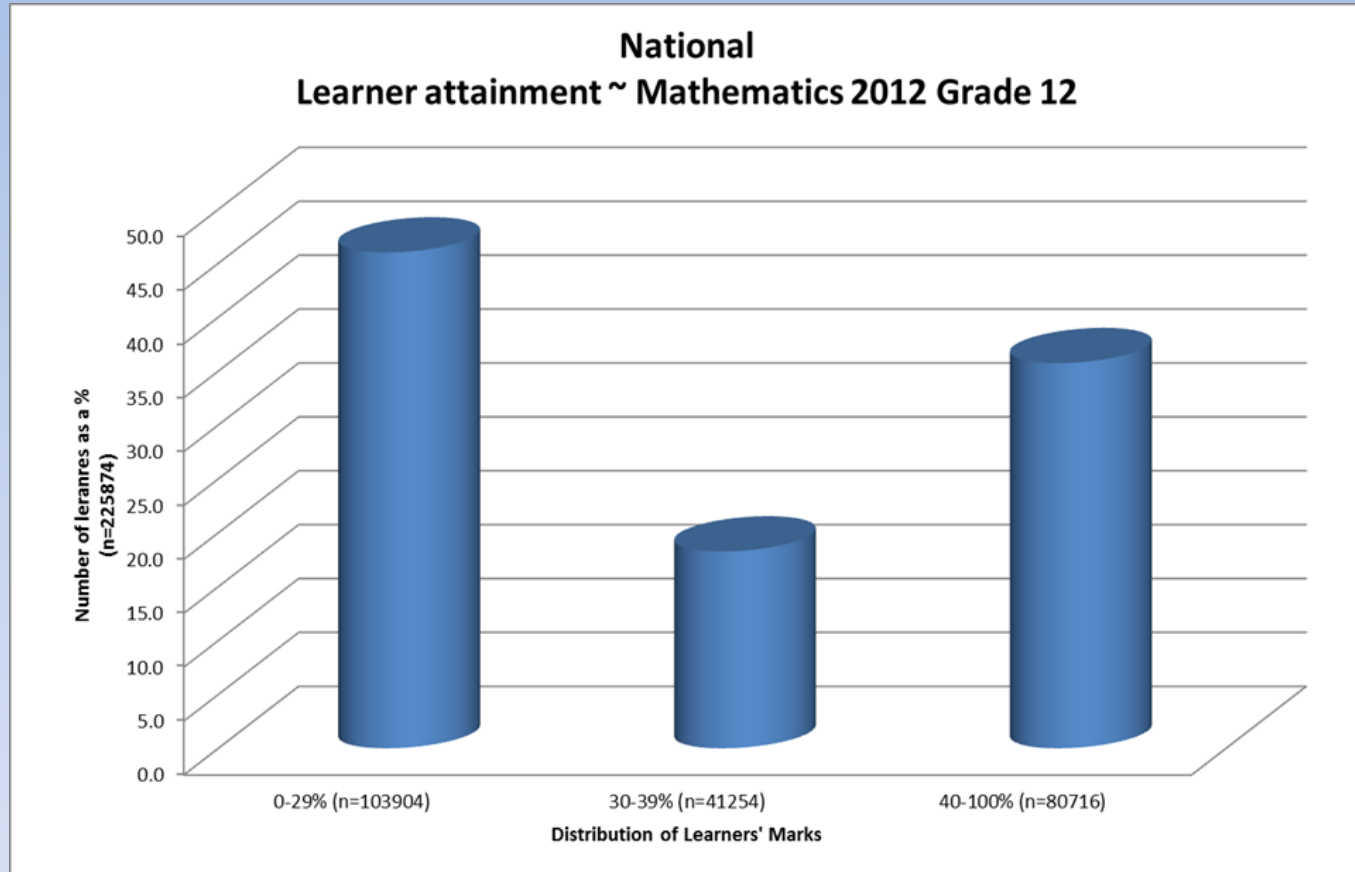
PDME2 1993



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1. <i>From a Dogmatic, Ready-Answer Approach of Teaching Mathematics Towards a Community-Building, Process-Oriented Approach</i>			
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Desire, repression and ethnomathematics
Nick Taylor
Respondents: Paula Ensor, John Volmink

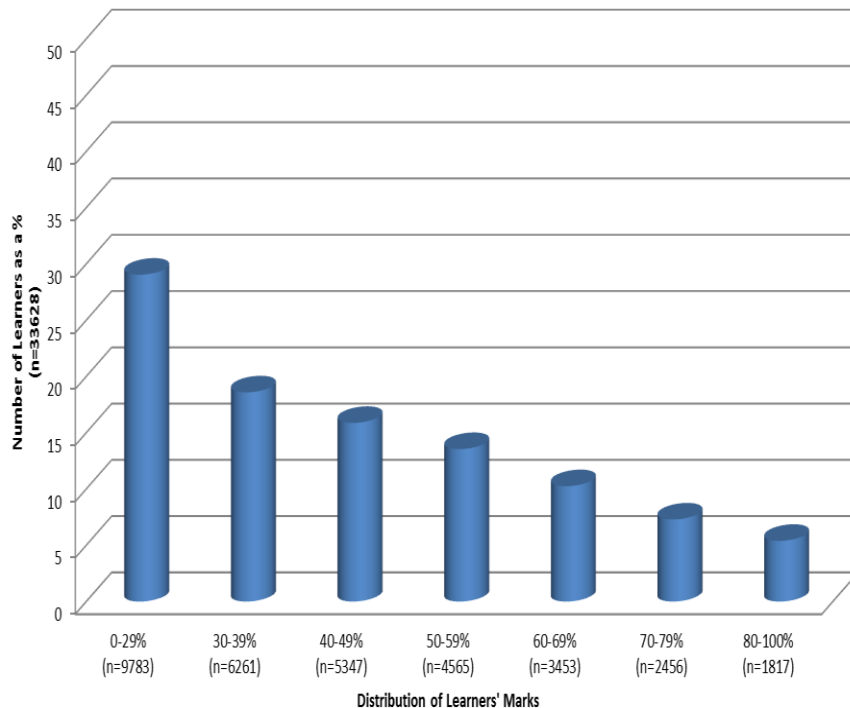
School mathematics performance 2012



Access for all, Learning (epistemic access) for some

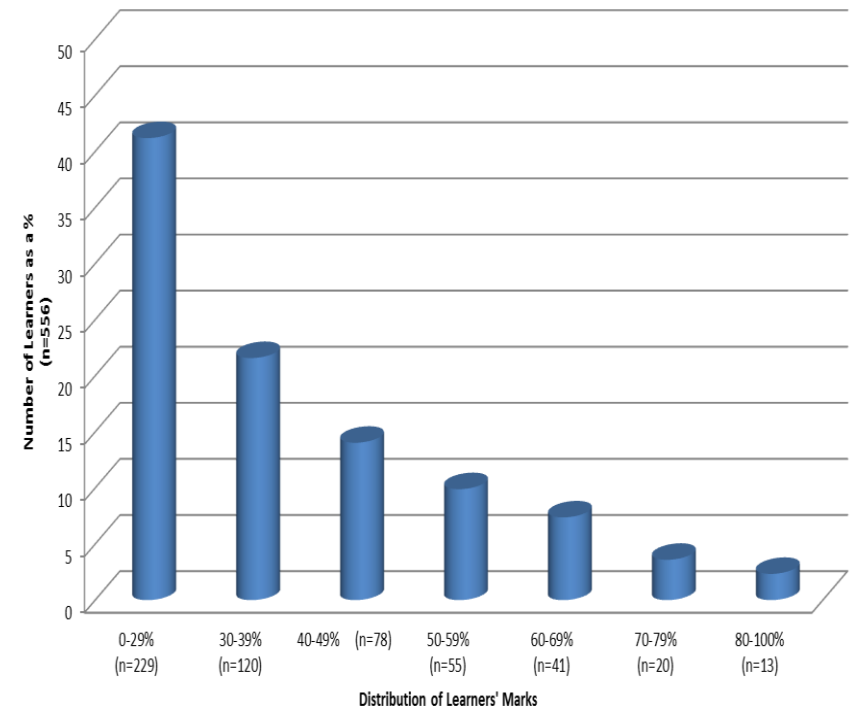
Gauteng Province (759 Schools)

Learner attainment ~ Mathematics 2012 Gr 12 National Exam



WMCS Project Schools (10 Schools)

Learner attainment ~ Mathematics 2012 Gr 12 National Exam



Simplify where possible: $3x - y + x$ (Level 3)

ICCAMS Codes + WMCS Codes

Missing	
Correct	$4x-y$
Letter Evaluated	2
Conjoining	a) $\pm 4xy$ b) $3xy$
Additional Wrong	a) $2xy$ b) $2x-y$ c) $4x+y$ d) Other

Prevalence in WMCS Data

	Grade 9	Grade 11
Missing	7.1	7.8
$4x-y$	16	48.8
2	0.3	0
$\pm 4xy$	6.5	5.5
$3xy$	11.8	3.6
$2xy$	2.4	2.3
$2x-y$	0.7	2.5
$4x+y$	3.4	4.8
Other	51.8	24.7

Dominant discourses and positions over time

TIME	Pre 1994	1995 - 2008	2009 - present
Positions/ actions			
Discourses			
Framing Equity, knowledge, power (Janks)			
Maths Curriculum			
Maths Research Ed			



Dominant discourses and positions over time

TIME	Pre 1994		
Positions/ actions	Anti-State		
	Opposition		
Discourses	Dichotomies		
	Oppressed/or Powerful/less Banking/Processing Them/us		
Framing Janks 2010	Access and/to power		
Access, power, diversity design	Knowledge of the powerful		
	Access for all		
Maths Curriculum	Apartheid curriculum Segregation Subjugation Verwoerd's legacy		
Maths Research	Ed Critical maths Ethnomaths		



Dominant discourses and positions over time

TIME	Pre 1994	1995 - 2008	
Positions/ actions	Anti-State	Pro-State	
	Opposition	Development - Design	
Discourses	Dichotomies	Boundaries	
	Oppressed/or Powerful/less Banking/Processing Them/us	Maths knowledge <ul style="list-style-type: none"> • Academic-everyday • Academic – work • Expert - representative Professional knowledge <ul style="list-style-type: none"> • Maths – pedagogy • Received – produced (texts) 	
Framing	Access and/to power	Diversity and design	
Janks 2010 (Language/m aths)	Knowledge of the powerful Access for all	‘Negotiated’ All are capable - No deficits	
Maths Curriculum	Apartheid curriculum Segregated Authoritarian Verwoerd’s legacy for maths	MLMMS – integrated Outcomes – critical and specific NCS - (Maths/Maths lite) Outcomes – content	
Maths Research	Ed Critical maths Ethnomaths	Reform pedagogy Participation Community	



Dominant discourses and positions over time

TIME	Pre 1994	1995 - 2008	2009 - present
Positions/ actions	Anti-State	Pro-State	Pro – Civil society
	Opposition	Development - Design	Redesign
Discourses	Dichotomies	Boundaries	Complexity
	Oppressed/or Powerful/less Banking/Processing Them/us	Maths knowledge <ul style="list-style-type: none"> • Academic-everyday • Academic – work • Expert - representative • Professional 	And not or ... Far harder, more complex and contradictory than Anticipated/realised
Framing	Access and/to power		power, diversity
Janks 2010	Knowledge of the pow		knowledge
(Language/m aths)	Access for all		potential
Maths Curriculum	Apartheid curriculum Segregated Authoritarian Verwoerd's legacy for maths	Outcomes	NCS – CAPS
		NCS - (Maths/Maths lite) Outcomes – content	Topics Increasing prescription What, how and when
Maths Research	Critical maths Ethnomaths	Reform pedagogy Participation Community	Identity Powerful maths

Race
 Always about race
 Rarely only about race



Concluding comments (from Janks, 2010)

- 'Access' a double-edged sword (access paradox)
- Access to powerful knowledge increases and entrenches its power

Desire for what one is excluded from, particularly mathematics and language is not simply of symbolic value – it has material consequences – both mathematics and English open and close doors to further study and employment

“Becoming what we lack changes who we are. Something is always lost in the process. As educators, changing people is our work – work that should not be done without a profound respect for the otherness of our students. Desiring what one is not should not entail giving up what one is” (Janks)

Enabling others to access mathematics – *to do mathematics* - is our work

