

# Deepening Engagement in Learning: A question of identity?

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# What do we mean by identity?

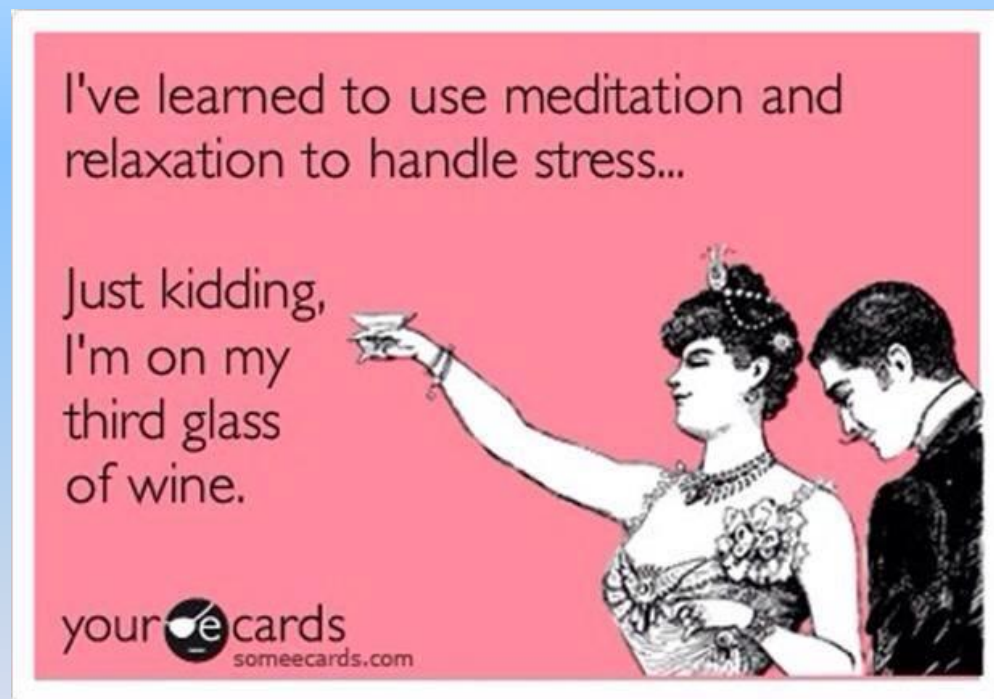
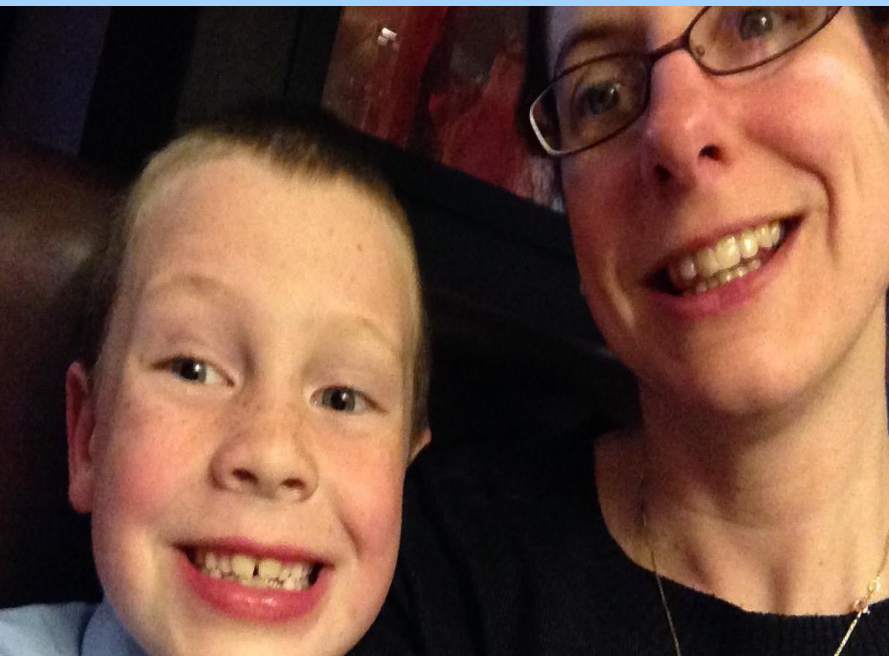
Practice is important!

- Reciprocal relationship – identity is mediated by practice and vice versa
- ‘From a social practice perspective it is through cultural practices as people ‘do life’ that social identities are constructed (Nasir and Saxe, 2003).
- Multiple practices = multiple identities

# Narrative identity

- Holland et al (1998) – narrative as a ‘practice of identity’ - self authoring with cultural models in figured worlds
- Mediated by practice – subjectivity mediated by activity becomes crystallised and reflected upon – becomes an identity
- Generalisations

# An Example....



# The 'Other in Me'

Bakhtin/Volosinov

- Addressivity – every utterance is a response to a previous utterance and is made in anticipation of the expected response of the addressee
- Heteroglossia – multiple voices which manifest in dialogue and inter-animate with one another

“I give myself verbal shape from another’s point of view, ultimately, from the point of view of the community to which I belong .”

(Voloshinov 1973, p86)





# Why is this concept of identity of useful?

- Identity as intensifier of engagement or disengagement in practice (including teaching/learning practices)
- A tool which mediates relation of subject to the motive of activity = emotional work.
  - “ ...we are who we are [and do what we do] because of what we care about” (Archer, 2000, p. 10).
- Lasting consequences – stability across time

# Why Mathematics?

$\frac{dM}{dt} = -V_{eq} \frac{dM}{dt}$   
 $du = -V_{eq} \frac{dM}{M}$   
 $\Delta u = -V_{eq} \ln\left(\frac{r_i}{r_f}\right)$   
 $\sum_{i=1}^{100} i = \frac{n(n+1)}{2} = \frac{100(100+1)}{2} = 5050$   
 $PV = nRT$   
 $\omega = 2\pi f$   
 $M = \bar{F} d \cos a$   
 $\frac{m_1+m_2}{r^2}$   
 $\sum_{i=1}^{100} i^2 = \frac{n(n+1)(2n+1)}{6} = \frac{100(100+1)(200+1)}{6} = 338350$   
 $\sum_{i=1}^{100} i^3 = \left(\frac{n(n+1)}{2}\right)^2 = (5050)^2 = 25502500$   
 $F = \text{net force} = \text{thrust} = V_{eq} \frac{dM}{dt}$   
 $\text{Newton's second law of motion: } \frac{d(Mu)}{dt} = F = V_{eq} \frac{dM}{dt}$   
 $M \frac{du}{dt} + u \frac{dM}{dt} = V_{eq} \frac{dM}{dt}$   
 $u \frac{dM}{dt} = -V_{eq} \frac{dM}{dt}$   
 $du = -V_{eq} \frac{dM}{M}$   
 $\Delta u = -V_{eq} \ln\left(\frac{r_i}{r_f}\right)$   
 $\Delta u = V_{eq} \ln\left(\frac{r_i}{r_f}\right) = V_{eq} \ln MR = 150 \text{ go}$   
 $\text{instantaneous mass of rocket}$   
 $\text{velocity of rocket}$   
 $\text{time}$   
 $\text{net force} = \text{thrust} = \bar{m} V_{eq}$   
 $\text{equivalent engine exhaust velocity} = 150 \text{ go}$






# Why is looking at identities useful in mathematics education?

- Explanatory of engagement/disengagement – from subjectivity in practice to identity
  - ‘I don’t understand these fractions’
  - ‘Fractions don’t make any sense’
  - ‘I’m rubbish with fractions/maths’
- Produced/co-constructed in practice which are themselves mediated by institutions, ideologies
  - E.g. Pampaka et al - we see ‘teaching to the test’ is inversely related to disposition (identity) to further study

# Looking for contradictions....

Black et al, (2010); Black & Williams (2013):

- The case of Mary – leading identity - developmental
- We identified contradictions between identities– i.e. several leading identities enacting diverse developmental pathways
- These arise because of engagement in contradictory practices/activity systems in the wider social structure

# What is the value of identity here?

- Adult can come to see contradictions and through semiotic action (discourse with self and others) take control over them
- Progressive action and world making (Holland et al, 1998)
- Rooted in practice and requires allies!

# Early Years as the ‘seeds’ of later Identities

No easy methodology of identity with young children

How?

- Difficulty with asking young children to reflect in this way – interpreting their cues... but it is possible
- The move from identity to identification

Reflection takes on a different guise

- ‘subject-in-activity’ is reflected back by others – an act of identification – subjectivity is given cultural form by others





- **Researcher:** Now this one...
- **Nico** (interrupts): Shapes
- **Researcher:** Pretty amazing... we have a posh word for that in maths... do you know? Geometry. There's loads of geometry in that picture
- **Nico:** It's the chair... at my house
- **Researcher:** Is it? I thought it was overhead wires...Is it a pattern on your chair? Why did you take that photo for me?
- **Nico:** It's because there is a shape {...} Triangles and I can see a bit of square but the triangles are blocking the squares..
- **Researcher:** oh right.. point to a square for me then.. Can you see any squares in there Nico?
- **Nico:** a bit of that... cush... that looks like a square... cos if you see the picture properly..of the whole chair you can actually see the square



- **Researcher:** What are you doing in this one?
- **Bilal:** [slowly and confidently] I'm... erm.. I'm putting those on the *whiteboard* and then [.] I wrote 15 add 5 [.] and then I counted altogether and then I wrote the number... the number altogether [.] and *then* [.] and then I did another one down there and then I wrote that answer
- **Researcher:** there you go.... [questioning tone] Who took the photo?
- **Bilal:** my ... my mum [Farya]
- **Farya:** [starts laughing] I took it
- **Researcher:** [questioning tone] you took the photo? Ahhh [elongated] Did he tell you to take the photo?
- **Farya:** *No*. I just did it.

# How might examples such as this help us understand engagement/disengagement?

- Collection of photo-and-talk acts help to establish the ‘seeds’ of identification beginning to take shape
- Alignment or contradictions between the home and school
  - E,g, Nico talks of school maths as boring and just ‘counting over and over again’
- We argue the home-school relationship is the site of alienation at this age – maths is potentially the **most** disconnected school subject from children’s everyday lives.
  - But also other work in mathematics education has highlighted this disconnection – e.g. Funds of Knowledge (Gonzalez; Civil; Baker & Street; Martin Hughes HSKE project).

# What is the value of identification here?

- Identifying the social experiences which become the resources for self analysis later on
- A way to understand development as mediated by institutional practices & policy
- Big Questions:
  - What are we doing?
  - How can we do it better?
    - Revolution – reform – or both!



# Conclusions

Identity is useful because:

- It provides an understanding of how and why individuals invest or resist particular practices which (re)produce social/institutional structures and do not always serve them well.
- It helps us to understand investment/resistance as a long standing process which begins early on
- Through reflection, it raises these issues to consciousness and therefore, helps us to imagine doing education differently