Don’t forget your feelings

Exploring adults’ motivation to learn mathematics

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Motivation

Education is not the filling of a pail, but the lighting of a fire.

William Butler Yeats
• Trade union members
• Sample size 20 - 8 women, 12 men
• 6 BME, 14 White UK
• Geographically spread
• TUC, unionlearn, USDAW, UNITE, POA, NIACE
Methodology and methods

Grounded theory - focusing on the words of the adult learners to develop theory

Interpretist, feminist, critical

Gatekeepers

*moderatum generalisations* - Payne and Williams (2005)
1. Why did you decide to start learning maths?

... anything I can do to show my employer I am trying to better myself and bring myself up to modern standards.... a positive thing.... (M, 28)

It does strengthen your arguments during negotiations.....(F,40)

I don’t want get left behind either....bragging rights... I purely did it for myself ... (M,40)
1. Why did you decide to start learning maths?

... I was co-opted into being the Health and Safety rep, they knew I had the ‘wherewithal’ to stand up to management, ....... ‘You needed something to get your teeth into

(Female, 53)
2. How do you prefer to learn maths at work?

...The teachers have moved on such a lot from the archaic way they used to have, more relaxed plus the classes are smaller ............ (M, 48)

‘That’s where the difference is, you are doing it with people you trust because you work with them, they are your work colleagues and they are friends’ (F, 47)
How do adults prefer to learn maths at work?

- ‘different’
- more collaborative
- smaller classes
- relaxed **atmosphere** where they felt they could **talk openly**
- relevant, - **practical applications** or - **everyday life** or linked to **trade union issues** e.g. Health and Safety
3. Is there any relationship between learning maths at work and union membership?

* ... If I am honest, part of it is because [the new ULR] was organizing it. He put a lot of effort in, he was getting a lot of stick from people on the shop floor, saying ‘You’re wasting your time’ and I said ‘If you get maths going I’ll put my name down and I will do it …

  (Male, 49)

* ... I want to know if the figures management give to me are accurate. I want to use them for evidence for an issue, such as illnesses, noise levels. You are making the figures work for you ..

  (woman, 40)
Framework of analysis

Socio-cultural context

Individual

Social Context – face-to-face groups
Motivation and Confidence

So many opportunities have opened up to me since I did my numeracy, built up my confidence... (F, 35)

‘Developing confidence is allowing you to talk about it’ (maths) (M, 28)

‘Gave me the confidence to think well, if I learned that I can learn this’ (M, 51)

12 out of 20 sources used the word confidence to describe a change in how they felt without a prompt
Successfully developing mathematical skills develops the adults confidence helps to shape their identities influences motivations both inside and outside the classroom.
Initial motivation to re-engage with learning related to individual needs and goals such as:

- improving job security
- filling perceived personal knowledge or skills gap,
- helping their children
- gaining public recognition of their knowledge or skills through certification.
Successful learning develops confidence both inside and outside the classroom

* when negotiating on behalf of fellow trade union members

* with their finances, enabling them to better support their families

* becoming teachers of mathematics

* supporting the integration of newly arrived children into the UK education system.
Continuing motivation

Illeris (2014) also claim that ‘transformative learning’ can bring about a change in identity –

Barbalet’s (1996) definition of confidence as ‘a feeling which encourages one to go one’s own way’ or ‘an emotion of self-projection’ or even ‘the emotion associated with a willingness to act, or self-confidence’
Motivation and Emotions

Motivation is ‘a potential to direct behaviour that is built into the system that controls emotion. This potential may be manifested in cognition, emotion and / or behavior’

(Hannula M., 2004)
Looking at the learner’s language

* Adults used emotional language
* 8 of the 20 used negative words, taboo, phobia, ‘a block, a barrier and a massive fear’.. ‘I would come out in a cold sweat’ (Female, 50)
* Most (18 out of 20 respondents) spoke positively about mathematics during the interviews.
* 12 out of 20 used the word ‘confidence’ in relation to their motivation and intentions to act differently in the future.
Doing maths is a confidence booster... getting rid of the stigma. People are frightened... they say I’m no good at fractions”. M(61)

“... for instance, when I learnt to do percentages you sort of sit up a bit straighter. M(49)
The domain of Affect

Individual

Motivation

Cognition

Emotions

Needs and goals

Personal History (previous experiences)
Motivation Theories

Psychological theories - Self Concept

- For education these include:

  one’s past experiences and associated feelings (Weiner, 1972)
  Fixed traits and growth states (Dweck, 2008)
  Fixed and growth Mind-set- (Boaler, 2016)
Affect and learning Mathematics

Building on notions of:


* Emotionally safe environments ‘students feel no danger of embarrassment, humiliation, or loss of dignity and respect’.

(Schorr & Goldin, 2008, p.134)
An Affective Mathematical Journey

Jean (46) was

- ...“severely dyslexic”

-“...so I was a ‘thicko’ a troublemaker”....
-“ It’s like my worst fear ... maths is the black hole to me.”

- ...she said learning ... ‘was daunting and I really did struggle.’
Jean (46) was

- but was ‘egged on by her colleagues” ...

- she developed more ‘confidence’ because she knows her colleagues, her husband and her tutor will support her.

- **She is now ‘passionate about maths’ and encourages others to learn.**
Motivation

A change in behaviour as a function of -an individual’s motivation, emotions and cognition -which develops and is developed, by social face-to-face groups -acting within a wider social context

(Kelly, 2017)