

Can and should assessment nurture an orientation to society and social justice?

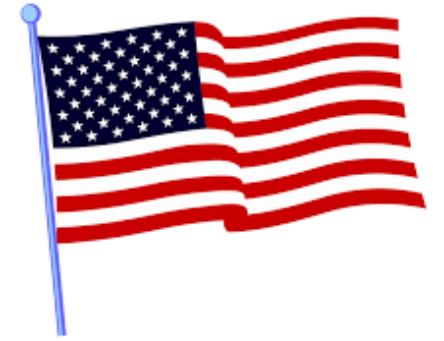
Jan McArthur (Lancaster University), Margaret Blackie (SU), Nicole Pitterson (Virginia Tech), Kayleigh Rosewell (Lancaster University)



Understanding Knowledge and Student Agency

Longitudinal and comparative 4 year study of Chemistry and Chemical Engineering undergraduates in UK, USA and South Africa

Paul Ashwin (PI), Jenni Case, Margaret Blackie, Jan McArthur, Nicole Pitterson, Reneé Smit, Ashish Agrawal, Janja Komljenovic, Kayleigh Rosewell, Alaa Abdalla, Benjamin Goldschneider



Five groups for data analysis and writing

6 institutions – Chemistry and Chemical engineering

Year 1 – 25 students interviewed in each program
Years 2 – 4 – 10 students followed

Possible total of 660 interviews

Curriculum

Knowledge

Study practices

Society

Personal project



Social Justice and Critical Theory

What is just, is that which allows the individual member of our society to realize his or her own life objectives in cooperation with others, and with the greatest possible autonomy (Honneth 2010, p. 13)

Building from Honneth and Adorno

A person who does not look beyond their own wellbeing and consider broader social wellbeing is unable to realise their own individual wellbeing

Nancy Fraser:

‘Purpose increasingly to think the unthinkable’

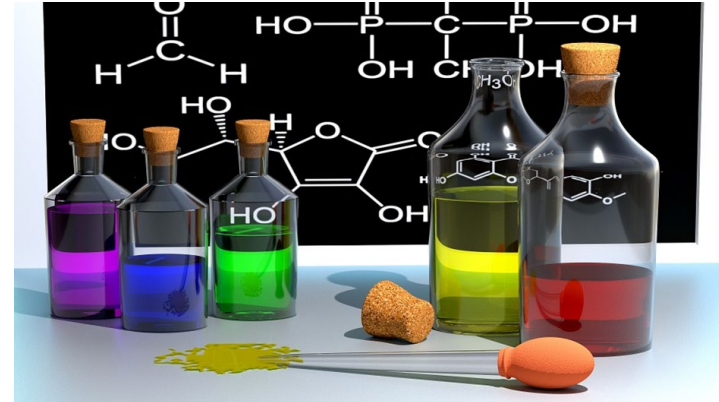
Society assessment analysis

Assessment in STEM

Building blocks – foundational concepts and principles

Regular assessment first years

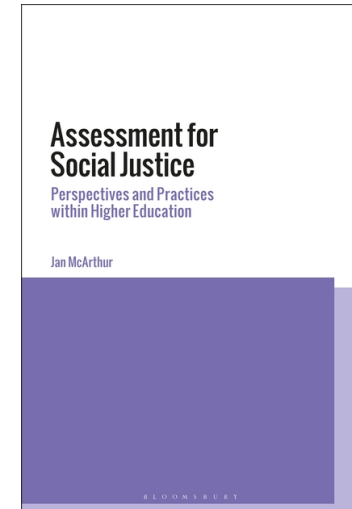
Building to project based in later years



Assessment for Social Justice

Inter-relationship between students seeing their achievements in terms of the wellbeing of others, and their own wellbeing

Self – discipline – society





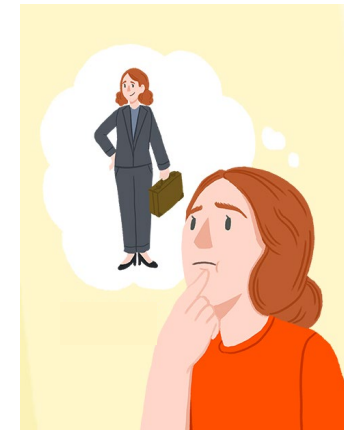
Orientation to Self:

eg. Assessment helps me to learn



Orientation to Discipline/Profession:

eg. Assessment prepares me for working in the profession



Orientation to Society:

eg. Assessment is preparing me to make the world a better place

Data Collection

Semi-structured interviews with students, supported by a piece of assessed work

First year: anything

Second year: core to curriculum

Third year: larger project

Lecture recordings

Interviews key contacts and lecturers

Data Analysis

Transcripts Years 1-3 South Africa and UK, 1-2 USA

Sections coded – “student experience”

Sub-coded “assessment”

We coded using our three categories – orientation when discussing assessment

Those who had orientation to society – read full transcripts – generated student stories

Orientations to self:

303/427



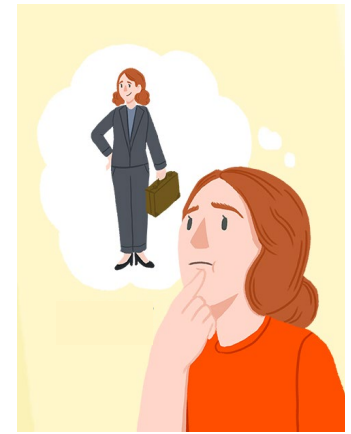
assessment and learning:

For an assessment, for example, when I was in high school, I used to think the purpose of an assessment was just to show the teachers that you can do it, look I'll get this mark. Since I've come to university, I've seen that it's about making the knowledge stronger in your head. For the future years.

(Rafia, Year 1, Chem. Eng. Europium University)

Orientations to discipline:

108/427



Assessment tasks helped them to think or behave as a Chemist/Chemical Engineer,

Vital preparation for going on to work in the profession.

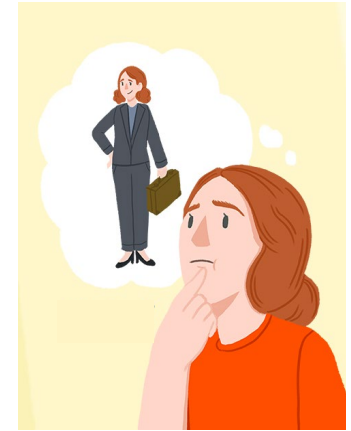
Most changes over time: roughly 20% in first & second year, double by third year

Orientations to discipline:

Influence of curriculum and assessment design

3 of the 4 UK sites – 3rd year large project

I think the design project is probably going to be the most useful ... I am finding it really difficult, but I do think you do learn more from challenging yourself. I think the design project is the most close to what life is going to be like in the future, actually in the field. You'll be working with teams trying to design something.
(Leo, Chem. Eng. Erbiun University)



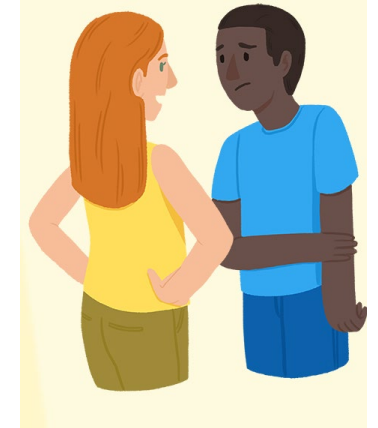
Orientations to society:

21/427

comments are often fleeting or tangential

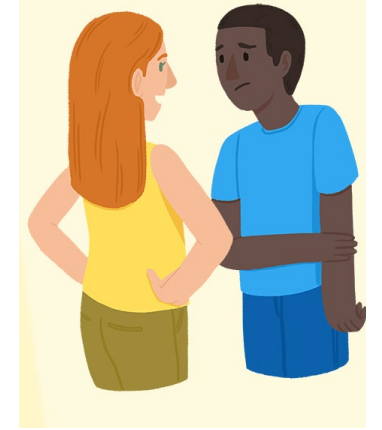
Rarely with purpose of assessment

Most often in discussion of assignment



Orientations to society:

More instances in South Africa



Not linked *explicitly* to issues of race or social justice but to water scarcity

Chemical engineering at Samarium University - 8 of 21

Lecturer interview - deliberate intention to show students that a career in chemical engineering was not confined to big business alone.

I think they are to again develop us to be holistic learners and I think the projects also are to keep us engaged about what is going on around us and how we can impact people in the community and provide solutions and change the situation in that regard.

(Nathi, Chem. Eng. Samarium University)

Asked the purpose of assessment...

The assignments are also more I feel like to get us to know about what's happening outside of our studies. And, what's actually happening in the real world. So, with chemical engineering for example this year we've been focusing a lot on water because of the water crisis

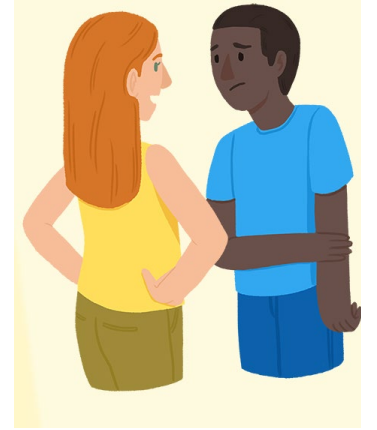
(Naledi, Chem. Eng. Samarium University)

Orientations to society:

More chemical engineering than chemistry

more women than men

Mainly first year!



Orientations to society:

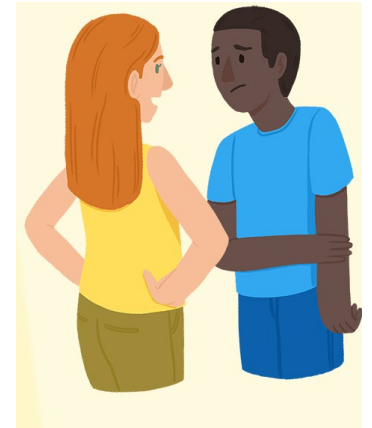
Strong perceived connection between (chemical) engineering and balancing economic and environmental issues.

Institutions do build an environmental sensibility into the curriculum, and this is reflected in assessment tasks.

But students rarely make this explicit connection when discussing assessment, and do so even less often as their degree progresses.

Have these students come to university with an orientation to society they apply to assessment – and then lost it?

Why are some students making this connection to society and others are not – for the same assignment which sometimes appears strongly designed to connect to society?



Student Stories

Harrison – begins and continues with social orientation: allowed to flourish through assessment in third year – but only due to procedural accident

Scarlet – starts with very strong social orientation, though only tangentially linked to assessment. Appears to lose this along the way.

Nina – consistent and strong social orientation. Very much nurtured by the course framework and ethos. Able to link with assessment – eg first year test, but mainly about future work , rather than current achievements.

Emerging Issues

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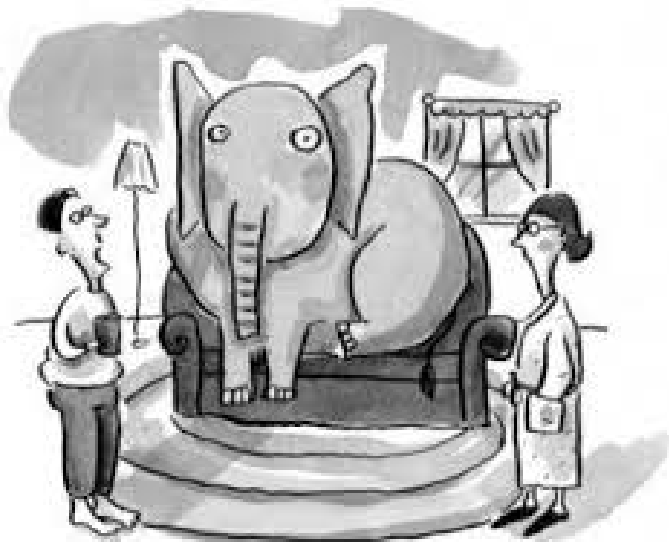
Society

Personal project

Two kinds of possibility

Assignments linked explicitly to social issues

Value proposition of the assessment



What elephant?

Tormasini

Students are profoundly shaped by competitive assessment strategies

It isn't just the task – we have to consider relationships and dispositions

Traditional assessment – competitive, high stakes and individual

Distorts our sense of achievement – such achievement fundamental to our own wellbeing and contributing to that of others

Boud – evaluation judgement

Lonergan – understanding understanding



Economic
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