



EGUsphere, referee comment RC1
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Comment on egusphere-2022-16

Lucy Beattie (Referee)

Referee comment on "Building confidence in STEM students through breaking (unseen) barriers" by Philip J. Heron and Jamie A. Williams, EGU sphere,
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General comments

Fig 1. The paper could benefit from a little more information as to how the outreach programme may link to existing education theories. For example Fig 1 refers to a "scaffolding technique" is this derived from known educational theorists e.g. Vygotsky?

Figure 1 scientific method is unclear. You talk about a hypothesis (in essence to be proved or disproved), but the table reads more like a research question. Perhaps you need to re-write it as a research question and not use the word hypothesis?

l.75 It would be interesting to dig deeper into the ways in which a nurturing environment have been fostered in this programme to promote learning. You cite the Darling-Hammond paper (2020) which discusses the ways in which a supportive learning environment in schools fosters a healthy resilient pathway to adult learning. How does this work in other adult Further Education (FE) contexts?

Do you think that the learners on "Think like a scientist" are perhaps re-engaging with a learning hiatus from childhood? Why was there a hiatus? E.g do you have any stats about prisoners in general do they leave school early? And why? Can this link in to any research on positive support/emotion/nurture in adult learners in other disadvantaged contexts e.g. refugees, victims of abuse etc etc. Would just be interesting to see if this expands and links to other areas of adult FE.

I.105 It would be good to expand on these theories a bit more in the context of inclusivity and perhaps contrast to other research on the hierarchies in STEM classrooms there is some interesting work in inclusive sci-comm you could look at Canfield, K.N., Menezes, S., Matsuda, S.B., Moore, A., Mosley Austin, A.N., Dewsbury, B.M., Feliú-Mójer, M.I., McDuffie, K.W., Moore, K., Reich, C.A. and Smith, H.M., 2020. Science communication demands a critical approach that centers inclusion, equity, and intersectionality. *Frontiers in Communication*, p.2.

I. 120 I like the framework for breaking down barriers. It is a useful how-to guide.

Overall an interesting read and engaging information about this programme which is clearly valuable outreach to such a marginalised community. Do you think this work can transfer some aspects to other marginalised communities within the prison system? E.g. have you considered working in Mother and Baby/Child units within prisons?

Technical

The UK prison system is not a whole system. Scotland and Northern Ireland have devolved criminal justice systems, therefore this should perhaps be made more clear in line 26 perhaps refer to England rather than UK.

Line 16 should multi-factorial be multifactorial?

Line 103 "the impact on this on student's" should read "the impact of...."

Line 113 "really interesting" is perhaps a little bland can this be expanded or explained in a more vibrant way?