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Is there more to learning than social constructivism?

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Presentation abstract

Social constructivism (SC) entails a view of learning which involves socially and culturally situated practices, alongside a view of knowledge as constructed, especially in dialogue or collaboration with others (Shay, 2008). This often leads to pedagogies which minimize expert guidance and emphasise interaction and knowledge construction between learners. As an explanation of how we understand the world it has much to offer, and it has influenced teaching and learning in higher education extensively. This includes the Educational and Learning Development literature, with SC named constituting an important influence on Academic Literacies theory and therefore likely on LD practice. It is important to challenge and test such dominant narratives in any community, if only to strengthen our understanding and practice. However, there seems to be a limited amount of such challenge in LD discourse. Usefully, other sub-fields of education provide alternatives. Researchers from Science Education, for example, have investigated constructivist-inspired forms of minimally guided learning such as discovery, project-based, problem-based and inquiry learning. Their conclusions are striking. Matthews cites work which 'reviewed an extensive body of research on constructivist [mainly discovery] pedagogy and concluded that it did not work, and where it did work, it worked in virtue of departing from constructivist principles' (Mayer 2004 cited Matthews, 2020, p.10). Such critics point to approaches informed by cognitive science, employed in ways which can combine more strongly and minimally guided approaches and thus improve learning outcomes for students. This raises important questions:

- These scientists are sceptical of SC-informed pedagogy and they seem quite clever. Should we at least be looking into this?

- Cognitive Load Theory was described as ‘the single most important thing for teachers to know’ in UK compulsory education some years ago (Wiliam, 2017). Is it weird that it is rarely discussed in Learning Development?
- How can we maintain a channel for recent findings in fields like cognitive science and neuroscience to inform out understanding of education, and specifically Learning Development?

Keywords: cognitive load; social constructivism; Learning Development; sage on the stage.

Community response

The session’s impact was evident in the thoughtful responses it generated. What emerged was less a debate than a collaborative exploration, with participants building on each other’s insights to develop a more sophisticated understanding of social constructivism and when and why different teaching approaches might be most effective.

The first response introduced the core issue by questioning false dichotomies in teaching approaches and proposing Cognitive Load Theory as a framework for moving beyond them:

> Thank you for this interesting session, bringing to the forefront Cognitive Load Theory. I wonder about your take on the term ‘meddler in the middle’ as a way of addressing the whole ‘sage on the stage, guide on the side’ that seems to have dominated the discourse in HE for quite some time. Is cognitive load theory a key part of our toolkit to avoid falling into these false dichotomies (guide-sage) that do not reflect our classroom practices?

Building on this critique of false dichotomies, another participant offered a more detailed response, acknowledging the complexity of social constructivism and raising important questions about Cognitive Load Theory’s scope:

> Thank you, Steve, for this provocative and refreshing argument for a greater emphasis on teacher-led methods in higher education – and the role of Learning Developers in securing this emphasis – in support of which you drew on insights from Cognitive Load Theory. You spoke in very broad terms, which is completely understandable given the time limit. This unfortunately meant you were unable to open up the umbrella term ‘social constructivism’

> and demonstrate to a potentially sceptical audience how specific assumptions and discursive practices inherited from this long and complex theoretical tradition elide, misrepresent and ultimately damage educators' efforts to apply important cognitive-load-informed practices. I would love to see further theoretical work from you and other like-minded Learning Developers on this topic, as well as more practical studies on how cognitive-load-informed practices can directly benefit students.
>
> However, essentially, I fully agree with the thesis that by exerting close control over which content is delivered and how, in line with the outcomes that they want, educators are not being authoritarian, but rather equipping students – especially, I would suggest, the least privileged – with cognitive schema onto which they can map their broader independent learning, and without which they risk ending up confused, frustrated and let down. I think that the risk that the educator's own biases and prejudices may end up constraining some of their students is smaller than is often argued, and it is a risk worth taking if we're serious about genuinely empowering those students without the social and intellectual capital to benefit from 'discovery' methods, especially when they first arrive at university.
>
> Finally, as a non-expert on the recent literature on this topic, I have a question: how much does Cognitive Load Theory take into account the emotional and embodied experience of learning? I am thinking, in particular, of the range of difficulties encountered by neurodivergent students in the classroom. When presented with the same information and tasks as their peers, these students arguably experience greater cognitive load, as they may be more sensitive to the 'inputs' of sensory stimuli, or take longer to process information.

A practical perspective also emerged:

> This session particularly resonated with me as I often feel like I do not have enough time to use a truly social constructivist approach, for example, when asked to cover significant materials and concepts in a relatively short one-off session, or during a one-to-one when a student is preparing for reassessment and just wants to 'fix' what they got wrong. It can be faster and simpler to 'tell' students what they need to know, and I think that as part of our role is demystifying the vague and unclear expectations of HE, sometimes that is the most useful approach!

The final comment stepped back from this emerging consensus to question whether the debate itself reflects actual teaching practice:

> I enjoyed this session and the debates that ensued around it. I had a sense that many people in the room were more in agreement than not that there is not one purist approach to teaching and learning that is always going to work for everyone – whether that is learner/teacher/Learning Developer – and lots of us already mix our methods and approaches in working alongside the students in our sessions and appointments, depending on a variety of factors.

> So does the binary really exist? At the same time, I have some concerns around some of claims and supporters of the ardent teacher-led approaches that can seem ideological – for example, the writing of Daisy Christodolou seemed to be snapped up by a government that on the one hand said it did not believe in experts, then wanted the experts back at the front of the classroom. All this said, as long as approaches can help create places of learning where curiosity, creativity and relational learning can thrive for as long as possible to help students develop confidence and trust in themselves, their tutors/Learning Developers, then all to the good.

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These responses to the session illustrate the multifaceted nature of debates and practices involving social constructivism. Moving from theoretical critique through practical application to broader synthesis, the community comments collectively demonstrate both the appeal of the presented arguments and the complexities involved in their implementation.

Author's reflection

The thoughtful and very welcome comments and critique shared above give lots of food for thought and reflection. I proposed my mini keynote partly as I have rarely seen this kind of scrutiny of social constructivism (SC) in the LD and related literature, and partly as it makes for some cracking quotes. Imagine talking to students about using cautious hedging language on Monday, then at ALDConf on Tuesday showing a slide which reads 'Discovery learning "is demonstrably a complete pedagogical failure as well as being philosophically naive" (Matthews, 2020, p.50)'. Fun!

Fundamentally I wanted to share and spark discussion of Sweller's claim that you cannot think about teaching and learning without considering human cognitive architecture. It seems a strong one. This insight suggests a need to incorporate Cognitive Load Theory (CLT) into thinking on teaching and learning. I get the sense that LD and educational development prefer more social and cultural perspectives on learning, whereas more 'hard science' or biologically-informed views of learning give our community 'the ick'.

I will try to deal with each comment/critique in turn:

Meddling coherently

I like the idea of the 'meddler in the middle' as a practical compromise between the sage on the stage and the guide on the side. I recognise that most of us frequently move between facilitative and more directed approaches in our practice, though I am not convinced this is fully recognised in the theoretical discourse around LD. Sunny Dhillon and I have written elsewhere (White and Dhillon, 2024) on the contradictions inherent in an Academic Literacies model which offers a 'design frame' or 'pedagogy for course design' (Lea, 2004) but which attempts to be at once anti-normative and hierarchical.

I suppose I am asking advocates of a strong social constructivism to be clear, coherent and consistent. To illustrate a potential lack of coherence, I used this quote from Perkins in my presentation, who was writing on *constructivism and troublesome knowledge* [my italics]:

> If a particular approach does not solve the [pedagogical] problem, try another – more structured, less structured, more discovery-oriented, less discovery oriented, whatever works.... *Teaching by telling may work just fine* [my italics] (2006, p.45).

I do not get the sense that the sentiment 'teaching by telling may work just fine' is one which fits comfortably with cutting-edge thinking or theory in contemporary LD. It most definitely does not fit with critical pedagogy, which is the only approach to pedagogy mentioned in the ALD values (yes, I am still banging on about that). Interestingly, CLT advocates would also resist the characterisation of effective pedagogy as simply 'teaching by telling', instead proposing a set of required steps which progressively develop knowledge and devise controls to freer practice activities, before setting more open application tasks for students.

Narrowing the critique

The critique that my interpretation of social constructivism is overly broad is valid. I suppose I am highlighting my sense that a 'strong' interpretation of social constructivist thinking (for example, in the form of Academic Literacies discourse) dominates theory in LD, and certainly the recent book on *How to be a Learning Developer in HE* (Syska and Buckley, 2023). However, in defence of the editors and contributors, they do subtitle the

book c*ritical perspectives* – suggesting (to me) a particular understanding of critical which I moaned about this time last year (White, 2024).

As suggested, I should have specified my critique of SC more narrowly – focusing on a strong form of SC as represented in the Academic Literacies influence on LD, which problematises teaching 'the basics' (Lillis and Tuck, 2016, p.34). Fundamentally I wanted to raise the under-recognised points that (1) some researchers think SC teaching does not work, and (2) CLT is itself under-recognised in LD. Actually, I think both CLT and SC approaches have merit and probably are in fact compatible. CLT could perform the important function of giving LDers evidence-based 'permission' to think about teaching 'the basics' and emphasising the need for learners to understand and integrate core concepts into broader schemas in their long-term memory. Once difficult and troublesome concepts have been embedded and integrated into long-term memory, this frees up working memory resources for learners to tackle more open tasks like application of this knowledge and critical evaluation of such activity.

The core issue I wanted to explore was the extent to which human cognitive architecture and its impact on learning should have a place in LD discourse.

Scaffolding as 'close control'

Mention of educators 'exerting close control over which content is delivered and how, in line with the outcomes that they want' prompted me to revisit the original definition of scaffolding (Wood, Bruner and Ross, 1976). Having previously allowed my understanding of scaffolding to settle on a looser idea of roughly 'no help unless a learner is stuck', I was surprised to find that exerting 'close control' can fit with one of the six features of scaffolding: the 'reduction in the degrees of freedom' of a learning activity. However, I think those more critical pedagogy-inclined than me might object to ideas of 'control', 'content' and that it can be 'delivered'.

Empowerment and evidence

Many of those critical of constructivist discovery or problem-based approaches (for example, see Tobias and Duffy, 2009) would certainly agree with the emphasis on a somewhat directed approach to 'empowering those students without the social and

intellectual capital to benefit from “discovery” methods, especially when they first arrive at university’. For those interested, the Tobias and Duffy book is a dialogue and debate between proponents of opposing constructivist and direct/explicit instruction approaches. Freire’s work on critical pedagogy also specifically aimed to help those without such social capital – but I’d note that as far as I am aware there is no empirical evidence that Freire’s approach was actually effective, other than anecdotal accounts.

CLT and neurodivergence

I am no CLT expert either, but the implications of cognitive load for neurodivergent students is an important issue, and emphasises the relevance of the link between cognitive processes, load and learning. Usefully this literature review identifies ‘a lack of systematic investigation into how cognitive load impacts neurodivergent students’ (Le Cunff et al., 2024, p.1), so plenty to work on there!

The final commenter emphasises that most educators already mix their methods and teaching approaches. Me too, and I agree that this is more effective and realistic in practice. As stated above, I think we could be clearer and more coherent about this in LD literature and theory, and could take into account ideas from areas like cognitive science of which CLT is a key part.

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