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Do we need to new set of soil principles to guide the cross-sector engagement of soil education

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The importance of and role that soil plays in ensuring the future sustainability of human and planetary health is well established and the emerging soil security concept clearly identifies that education is a crucial component to ensure the securing soil to be fit for this purpose. Traditionally education in soil science has been limited to developing expertise in the discipline. To be truly effective we need to go beyond the boundaries of the discipline, and even its natural home of academia, and begin to explore the types of learning that can be developed to engage the whole community and raise our collective connectivity with soil.

Previously theoretical frameworks based around the dimensions of to 'know', 'know of' and 'be aware' of soil have been accepted by the education community as well as experiential learning practices framed by the teaching-research-Industry-learning (TRIL) models. There is now the emerging question of the need for a set of newly proposed set of principles, in the same way as a set of elementary assumptions have been developed for disciplines in biology and geology, which will impact the design of learning and its engagement within the disciplinary and broader community. Starting with the Pedon this elementary level will ensure awareness of soil. Coupled with outward focused responsibility of providing salient knowledge together with the social intelligence will use the second principle of Processes to provide resolution to soil related problems. Traditionally, this knowledge is often used to tackle well know threats, but more recently the advances in digital soil mapping and decreasing soil modelling have enabled greater interdisciplinary opportunities to solve soil knowledge based around the principles of variation and ultimately forecasting soil change.

This paper will align the set of principles against the current soil science education practices and how these can be used to engage with the broader community outside of academia.