

Learning by doing is more memorable: soil judging as an educative tool

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What is soil judging?

Students aim to correctly identify soil features, classify soil profiles and interpret the soil and landscape capability for land use

Students compete as individuals and teams. An educational experience in a supportive environment (Hartemink et al., 2014)

Initiated in USA in 1960's: recognized as a key component of soil science curricula and graduate attributes

- 2012- First Australian Soil Judging Competition, Tasmania
- 2014 20th WCSS Jeju – first WCSS soil judging competition
- 2016 – first NZ Soil judging Competition at Joint NZSSS/ ASSS conference, Queenstown, NZ



What does the research tell us?

Field et al (2011)* Most effective (soil science) learning activities, based on analysis of student survey

Field work	43%	Lectures	8%
Laboratories	34%	Presentations	7%
Tutorials/group discussions	11%	Writing reports	5%

Cooper (1991)

- Promotes critical thinking skills
- Interpreting and analysing information in the field develops the ability to integrate diverse technologies : valuable graduate attributes

Rees and Johnson (2020)

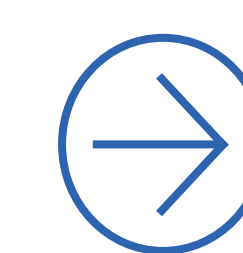
- Student understanding of soil science increased significantly
- Positive and meaningful education event, especially for location-based learning

Alumni and Development Office (2022)

- “We now have a number of pedologists at Manaaki Whenua – Landcare Research who are Lincoln alumni and took part in this competition in the past, which is a testament to the practical training opportunity this competition provides to students”

Why is it a valuable pedagogy?

- A field component is vital to soil science teaching
- Students like learning in the field – can comprehend soils as part of the landscape and a functioning ecosystem
- Learning occurs at a deeper level – in the field there is more time to think and interact with instructors
- A proven pedagogical framework – operating in USA since 1960's
- Provides a pipeline into soil science study for interested students
- At **Lincoln University**, over 60 students have participated in soil judging since 2016; now offered as a micro credential qualification
- Many have found graduate roles with a pedological or environmental focus
- Lincoln University partners with Manaaki Whenua, Alumni and industry to deliver soil judging



Conclusions

- Proven pedagogy and effective knowledge gain
- Promotes an academic interest in soil science
- Professional development opportunities in a supportive environment

“I learnt more pedology during this experience than I did during my lectures”

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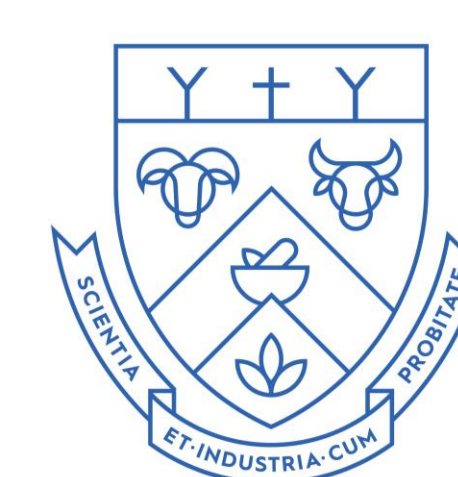


“I really enjoy the practical side of soil judging; this (competition) has increased my interest in learning more about soils”

“Soil judging allowed me to apply my theory knowledge from lectures to the field and landscape. I'm doing Hons. next year”

“It was an amazing experience to see soils that were so different to NZ and to meet other soil science students”

All photos: Carol Smith



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