



Bricks, Bulls, and Big Ideas: Exploring Systems Thinking in Collegiate Bull Management

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Introduction

Methodology

Conclusions

- Systems thinking is a holistic lens for identifying connections in complex issues and promoting sustainable agriculture (Elsawah et al., 2022; Furst-Bowe, 2011; Meinke, 2019; York et al., 2019).
- Self-awareness, built through purposeful reflection, is central to leadership development (Kiersch & Gullekson, 2021).
- LEGO® Serious Play® (LSP®) is a hands-on tool that fosters dialogue, reflection, and systems understanding in agricultural education (Fearne, 2020; Meadows, 2008).

- Post-test survey: 8 adapted Stroh (2015) items ($\alpha = .97$), 5-point Likert.
- Systems learning score = item mean.
- Participants: n=24, ages 18-24, 42% response, diverse demographics.
- No early/late response differences → generalizable (Lindner et al., 2001).

- Students recognized how their roles influence others in the bull management program, highlighting the value of hands-on, systems-focused learning.
- Despite gains, students reported limited understanding of systems overall, reflecting the inherent complexity of social-technical systems (Von Bertalanffy, 1973).

Implications & Recommendations

- Provides a starting point for integrating systems-focused curriculum in college agriculture courses using LSP®.
- Future research should examine why students can see their role in a system yet still struggle to grasp the broader concept of systems.
- Investigating LSP® with different student groups and cultures, as well as exploring alternative evaluation methods, can strengthen its use in systems teaching.
- Instructional Considerations: Facilitators should carefully model and explain systems, while providing targeted interventions to build baseline systems knowledge before LSP® activities.

Theoretical Framework

- Guided by Von Bertalanffy's (1973) General Systems Theory, a holistic system analysis.
- Chosen for complex technical/social program structure.

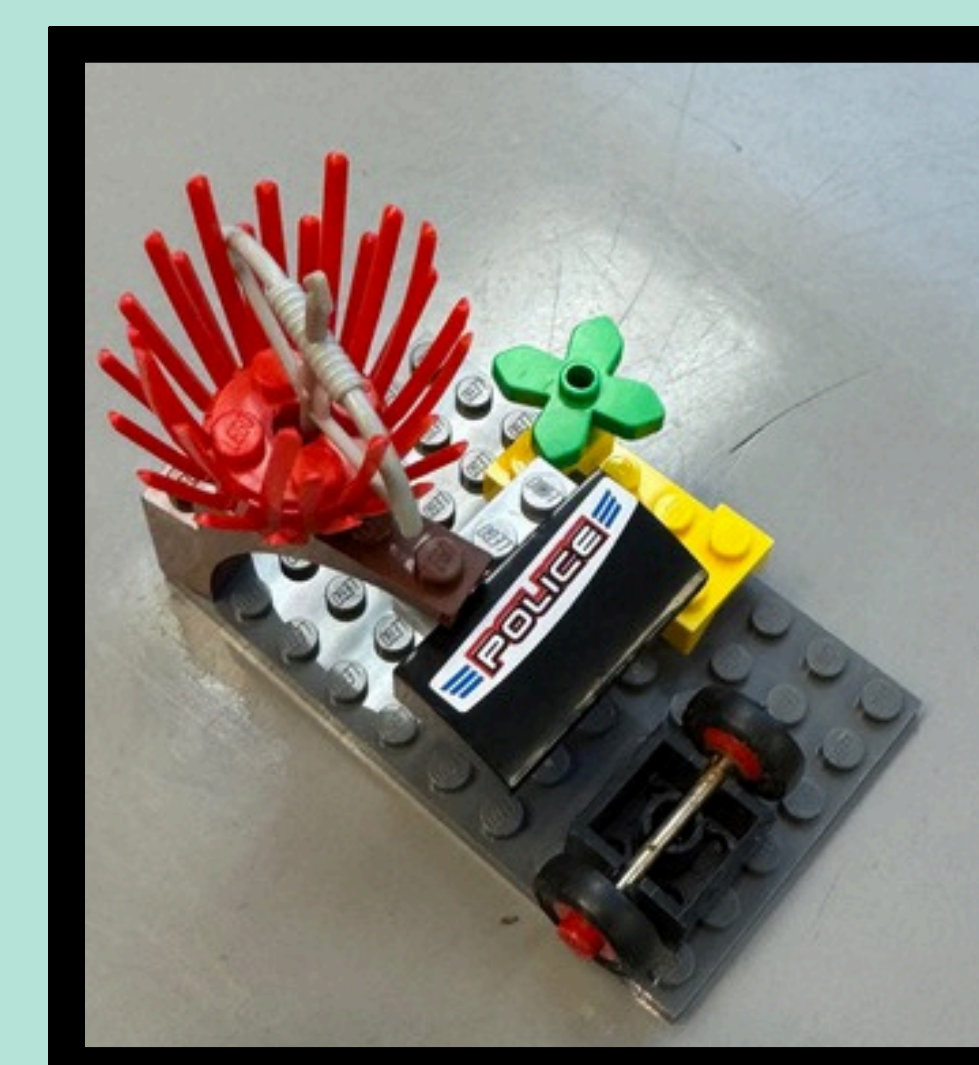
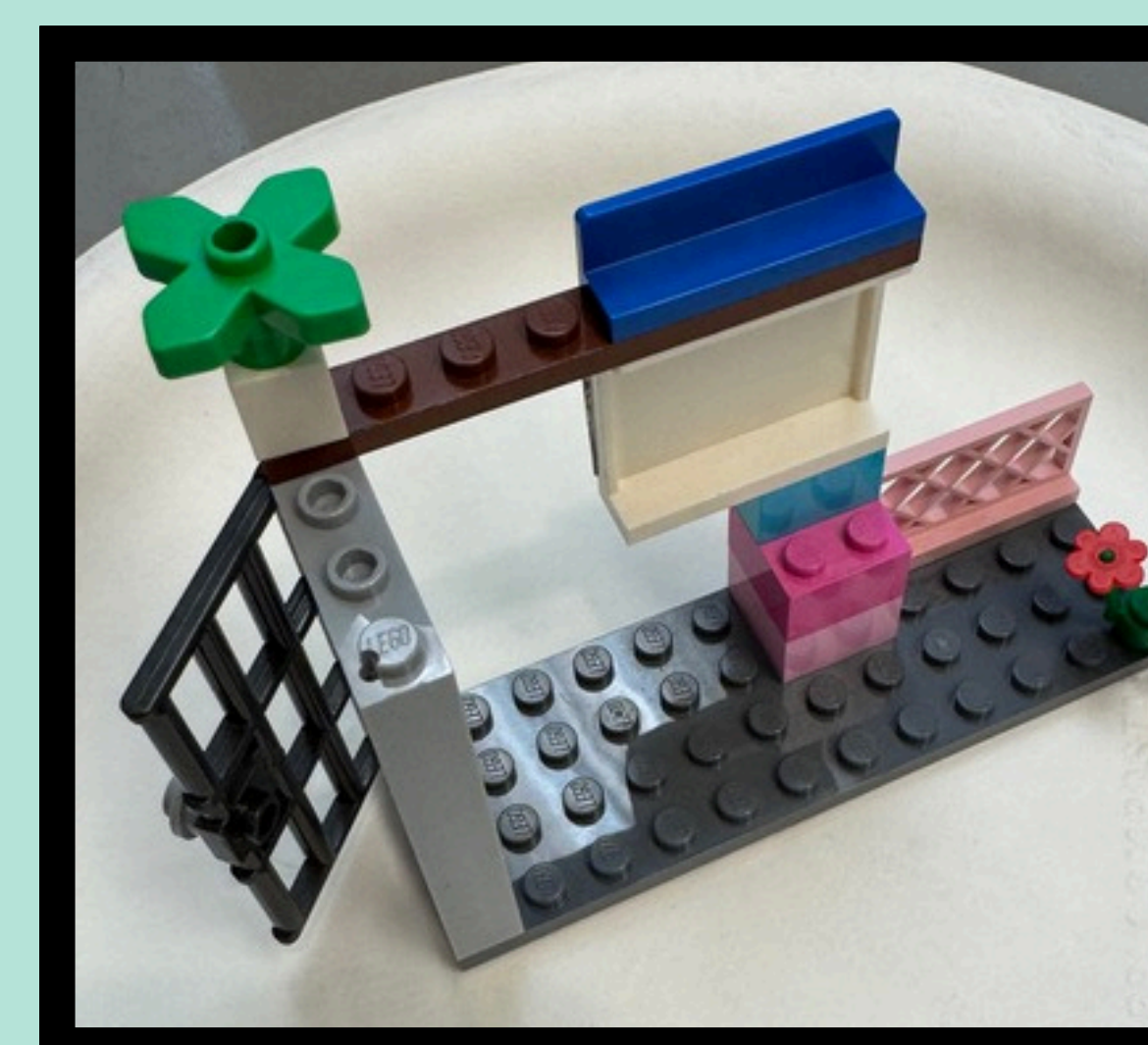
Results & Findings

Table 1
Description of Bull Management Students' Perceptions of LSP®-Driven Systems Learning

Item ^a	M	SD
I understand how my role impacts others in this system	4.19	1.07
My capacity to accept responsibility for my part in a system has increased	4.16	1.07
I understand how others impact my role in this system	4.16	1.05
My capacity to hold productive conversations concerning systems has increased	4.08	1.05
I enjoyed learning about systems	3.90	1.12
I understand what my role is in this system	3.89	1.15
My capacity to collaborate concerning systems has increased	3.86	1.15
I understand how systems work	3.73	1.15

Note. Scale used where 1 = strongly disagree and 5 = strongly agree
^aAdapted from Stroh's (2015) *Systems Theory for Social Change*

Check out what some of our builders made!



References

