METHOD ARTICLE

The educator's LSP journey: creating exploratory learning environments for responsible management education using Lego Serious Play [version 1; peer review: 2 approved with reservations]

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Abstract

Research into responsible management education has largely focused on the merits, attributes, and transformation opportunities to enhance responsible business school education aims. As such, a prominent part of the literature has occupied itself with examining if responsible management modules are inherently considered a non-crucial element of the curriculum and determining the extent to which business schools have introduced such learning content into their curriculum. However, there has been scant research into how to apply novel teaching approaches to engage students and promote responsible management education endeavours. As such, this paper seeks to address this gap through the development of a teaching framework to support educators in designing effective learning environments focused on responsible management education. We draw on constructivist learning theories and Lego Serious Play (LSP) as a learning enhancement approach to develop a pedagogical framework titled The Educator's LSP Journey. LSP is chosen due to its increasing application in learning environments to help promote critical discourse, and engage with highly complex problems, whether these are social, economic, environmental, or organisational. Therefore, this paper contributes to the responsible management education discourse by providing educators with a practical methodology to support student engagement and co-creation of knowledge by fostering exploratory learning environments and enriching the practices of active learning communities.

Keywords

Responsible Management Education, Higher Education, Teaching, Exploratory Learning Environments, Lego Serious Play, Playful Learning

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Introduction

Business schools play a vital role in educating and shaping the mindsets of future global leaders, as they aim to offer a rich environment of deep analysis, entrenched engagement, and thought-provoking discourse (Harrison *et al.*, 2007). Their role also extends beyond the confines of the academic world as they have increasingly become embedded in their respective national economies (Thorpe & Rawlinson, 2013) where they help foster innovations by collaborating with industry, academic experts, and thought-leaders (Minshall & Wicksteed, 2005). Furthermore, as the relationship between society, the environment, and business becomes ever-more intertwined, business schools and educators have an increasingly intricate role in signifying the complexity of these elements to help develop socially responsible professionals that can draw on an ethical management ethos, and apply it to future practice (Dyllick, 2015; Godemann *et al.*, 2014).

The concept of responsible management education promotes such aims, with key principles underpinned by organisations such as the United Nations (Stefanova & Stefanova, 2013). However responsible management education has hitherto largely focused on what constitutes elements of corporate social responsibility (CSR), and how these should be embedded into the curriculum (Aragon-Correa *et al.*, 2017; Dyllick, 2015). In part this has been driven by a delineated interpretation of responsible management education topics. For example, there has been a focus on content which is salient to execution, and therefore driven by the analysis of the plethora of social, economic, and environmentally aware subjects which may bear relevance to business school education contexts (Muff, 2013). These include elements such as sustainable supply chains, CSR and the circular economy (Snelson-Powell *et al.*, 2016). Nonetheless, business schools have been criticised for their lack of progress in recognising the importance of these responsibility-aware topics (Dyllick, 2015).

In turn this has focused institutions and educators on the premise of content-driven responsible management education, with limited recognition of the processes of engagement and delivery. Notwithstanding the importance of this focus, business schools and educators are facing complex teaching and learning challenges in order to deliver these subjects in a way that matters most for their audience, in this case students, who represent future practitioners (Dacre *et al.*, 2019; Ojiako *et al.*, 2011). As such, by bringing together constructivist learning theories like exploratory learning environments (Duckworth, 2006; Rick & Lamberty, 2005), organisational sustainability teaching frameworks (Stubbs & Cocklin, 2008) and empirical research on the use of the Lego Serious Play (LSP) methods in educational settings (James, 2013; Kurkovsky, 2015; Mccusker, 2014), this paper aims to conceptualise LSP as an innovative teaching method that utilises Lego bricks to improve student engagement and participation, create exploratory teaching environments that can support learning, and help shape responsible organisational leaders. The focus of this paper therefore offers a departure from prior research focused on what constitutes responsible management education content, to provide a framework on how to engage in the teaching and learning process of this content.

Context

Responsible management education

Responsible management education can be defined as the educational practices aiming to facilitate students' learning on issues like CSR, the social impact of organisations on the larger societies they are embedded in and the impact organisations have on the preservation of the environment (Forray & Leigh, 2012). The larger issues of how to manage organisations ethically and how these impact everyday decisions and practice are also included in the responsible management curriculum (Godemann *et al.*, 2014). Discourse calling for business schools to promote a more responsible management curriculum has increasingly gathered support in management education literature, but adapting the curriculums of business schools to this has proved to be a more challenging task than initially expected (Parkes *et al.*, 2017; Rasche *et al.*, 2013; Rasche & Gilbert, 2015).

One of the main issues around the implementation of responsible management curriculum is the fact that business schools have not made such courses mandatory for all students, with 75% of these modules offered as electives, thus remaining detached from core disciplines (Rasche *et al.*, 2013). Similar conclusions were drawn by the Principles for Responsible Management Education (PRME, 2014) indicating that, even though there have been the curriculum additions of CSR and sustainability modules, they are not yet the central focus of business management education, thus failing to effectively address the challenge in encouraging more responsible future organisational leaders (Rasche & Gilbert, 2015).

What this paper suggests is that for such efforts to be more impactful, educators should think beyond the learning content and consider innovative teaching approaches that would strengthen learning sessions. The quality of teaching and learning practices in business schools has been previously challenged by scholars, suggesting that business schools are somewhat ineffective in equipping students with the necessary skills and knowledge to tackle complex organisational challenges (Bennis & O'toole, 2005; Pfeffer & Fong, 2002; Taylor *et al.*, 2002). Even though organisations generally prefer exploratory hands-on pedagogies when it comes to management training (Gold & Holman, 2001), business schools have commonly not taken the same approach, and have in some instances ignored participatory teaching methods and tools during learning sessions (Eckhaus *et al.*, 2017; Mello, 2006).

Lego Serious Play

Recognising the need for improved student engagement and participation, teaching staff in higher education have in recent years introduced a plethora of innovative playful pedagogical tools in the classroom, such as board games, digital games, simulations and role-playing activities (Feinstein *et al.*, 2002; Wyss-Flamm & Zandee, 2001). Such endeavours seek to increase student engagement and facilitate active learning by

involving students in the educational process more, compared to instructional teaching approaches (Dacre *et al.*, 2018; Gkogkidis & Dacre, 2020). LSP is also increasingly being recognised as an innovative and adaptable method for teaching and learning practices in higher education (Peabody & Noyes, 2017). A growing body of literature examines the merits and application of LSP as a teaching method with studies reporting improvement in student engagement, participation, knowledge co-creation and knowledge retention (Grienitz & Schmidt, 2012; James, 2013; Mccusker, 2014).With LSP having successfully been utilised in different knowledge domains such as computer science (Kurkovsky, 2015) and management education (Grienitz & Schmidt, 2012) this paper suggests that LSP can enable educators to embed the values of constructivist learning theories into their teaching practices and operationalise exploratory learning environments to enhance student engagement and participation.

Exploratory learning environments

Rick & Lamberty (2005) define exploratory learning environments as educational arrangements and activities that facilitate the learners' ability to construct knowledge connected to the subject matter through student led reflective exploration. Exploratory learning activities can promote an increased democratic style of education and according to Duckworth (2006, p. 67) can guide students towards:

- Building their own understanding, influenced by their own academic interests through exploring questions provided by educators.
- Making a connection between the knowledge and experiences they already have and the learning material, thus building new knowledge through interpreting the material according to their own worldview.
- Openly sharing ideas with their peers by asking for feedback. Students first shape their own ideas then share them with their peers and work out how different ideas relate to each other and to the subject matter.

Exploratory learning environments enable student participation in learning processes by offering their own ideas and interpretation of the knowledge under discussion. Educators adopt a facilitative rather than prescriptive role aiming to create educational experiences based on values of constructivist learning theories (Bruner, 1961). Similar perspectives have been shared by later scholars such as King (1993), arguing for a shift in the role of the educator from 'sage-on-the-stage' to 'guide-on-the-side', facilitating learning rather than imposing it. LSP as a teaching method embodies constructivist learning theories emphasising exploration where "to understand is to discover, or reconstruct by discovery" (Piaget, 1972, p. 20) while at the same time there must be a recognition of knowledge being created in specific cultural contexts among educators and learners (Vygotsky, 1980). Exploratory learning environments facilitate knowledge communities where their members participate in their practices purposefully, with knowledge residing in the specific context it is being used in (Hickey & Zuiker, 2005).

Prior student knowledge and experiences, as influenced by the students' social and cultural environment, are viewed as a crucial element of the learning processes that help construct knowledge, and thus should ideally be discussed and negotiated among students and educators (Salomon, 1997). Students and educators, in engaging with responsible management curricula, aim at producing and negotiating knowledge that will inform future ethical management practices. Both undergraduate and postgraduate student cohorts in business schools come from a variety of different national and cultural backgrounds, with many of them, especially those undertaking postgraduate courses, having prior experience of management in organisations (Arbaugh *et al.*, 2010; Jabbar & Hardaker, 2013; Tompson & Tompson, 1996). Bringing these student experiences and knowledge at the forefront by discussing and negotiating rather than ignoring them is a challenge that LSP can assist educators with, as a methodology designed around the values of active and egalitarian participation. Finally, constructivist theories suggest that new knowledge acquired by students is added to existing knowledge schemes, mental models that keep expanding when new understandings are achieved (Hoidn, 2017). This idea is especially pertinent to responsible management education, where students with existing knowledge of management theories and practices are offered the opportunity to enhance their knowledge with responsible management frameworks, assisting the transition towards a more sustainable type of management.

The educator's LSP journey

We draw on the responsible management education and exploratory learning environment approaches, discussed as part of the theoretical context, to outline a teaching and learning approach to applying practice-based LSP. The resultant conceptual framework of the 'educator's LSP journey' is thus presented here (Figure 1).

The framework suggests two main stages for designing and facilitating educational sessions using LSP: design and

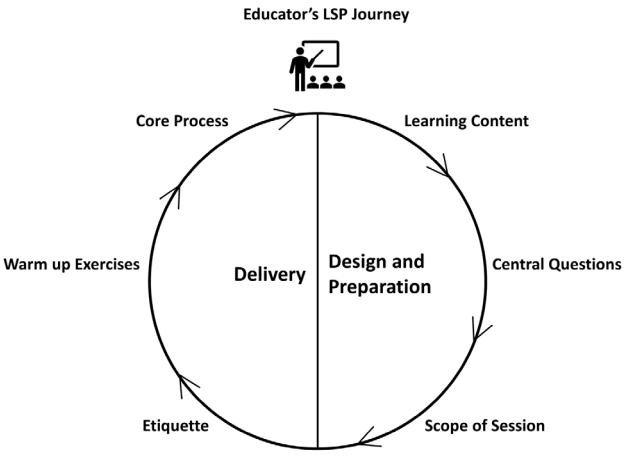

Figure 1. Educator's LSP journey framework.

preparation; and delivery. Each is further delineated across the following six sub stages: (i) learning content; (ii) central questions; (iii) scope of session; (iv) etiquette; (v) warm up exercises; and (vi) core process.

Design and preparation

The design and preparation stage of the framework adopts the following process (Figure 2). This can be used by educators to assist design responsible management educational LSP sessions.

The learning content should be the starting point and cornerstone of every educational LSP session. During this stage, educators can identify what learning content they want to deliver, for example a case study or more theoretical content around responsible management. LSP is a time intensive activity where lecturing should be kept to a minimum, which makes LSP more suitable for seminar sessions where student numbers are smaller compared to lectures. The second step when designing an LSP session involves designing questions that will allow students to reflect on the learning content and contribute their opinion and understanding. Educators are advised to design questions that are accessible and inclusive for all students to answer, while being useful for the educators in order to connect theory with practice. Finally, educators need to decide what the scope of the session is depending on the provided amount of time, and the number of students present. Questions identified as appropriate for the session need to be prioritised as time constraints might make it challenging for the entire range of questions to be discussed within a single session. Using an organisational sustainability teaching paper (Stubbs & Cocklin, 2008) as an example, the next section outlines how the suggested design and preparation framework can be applied by educators in order to design effective LSP learning sessions.

Learning content

Providing new teaching methodologies to support a better understanding of sustainability concepts in management education (Cervantes, 2007), Stubbs & Cocklin (2008) suggest a pedagogical approach where educators present students with a typology of business sustainability practices, followed by two case studies of organisations that engage in business sustainability practices.

The suggested typology describes organisations following an eco-centric approach striving to create closed-loop systems where unused materials belonging to one organisation in the system are used as an input for another organisation (Stubbs & Cocklin, 2008) and destruction of environmental resources is minimised by sharing infrastructure between organisations (Ayres & Ayres, 2002). Organisations designed around the idea of ecological modernisation aim at profitability while contributing to the wellbeing of the organisation's stakeholders, and keeping environmental impacts like pollution to a minimum (Gladwin *et al.*, 1995). Finally, neoclassical organisations measure all of their activities based on their economic outcomes, where sustainability is not part of their core strategy unless they strive to increase profits by strengthening their competitive advantage, comply with legislation, address concerns and pressure from the public, or are pressured by stakeholders (Banerjee, 2001; Bansal & Roth, 2000; Shrivastava, 1995).

To support the understanding of the above theoretical concepts of organisational sustainability and facilitate student reflexivity during learning sessions, Stubbs & Cocklin (2008) suggest using real-world case studies describing organisations implementing such practices. Combining case studies with theory to teach business ethics is an established practice in business schools (Cagle & Baucus, 2006; Feldman & Thompson, 1990; Shannon & Berl, 1997), and one that can be combined effectively with the LSP methodology. Providing a case study to students at the beginning of a session can underpin a reflective process where students and educators negotiate their understanding of the learning content and explore emergent themes.

In their paper, Stubbs & Cocklin (2008) outline two case studies, one from the banking industry and one from the automotive industry, but do not offer a reference for these case studies. We suggest publications by Hamschmidt (2007) and Vives Gabriel (2017) which offer case studies which educators can use to teach sustainability and ethical approaches to management.

Having determined the learning content of a session, educators can now design the main questions that students should engage with during the LSP session.

Central questions

Looking to provide central focus learning points for their students, Stubbs and Cocklin (2008) offer the following list of questions for students to assist in their analysis of an organisational sustainability case study, and connect it with theoretical knowledge gained during the module:

- What are the main sources of income for the organisation?
- What are the main sustainability problems and risks that the organisation is facing? Risks can be categorised as environmental, social and economic.
- How can these different risk factors impact the organisation? (Students are encouraged to produce a

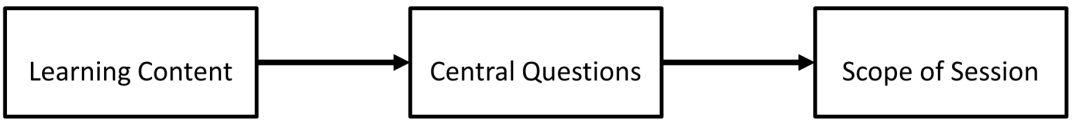

Figure 2. Educational LSP session design & preparation framework.

risk matrix at the end of the exercise, rating the likelihood and impact of each risk.)

- What are the potential solutions to these problems and risks, what should the business do to solve these issues?

Taking the last question that was mentioned above as an example, educators can motivate students to consider issues such as the strategies the organisation might follow to tackle these challenges, such as; lead the industry by shaping it or follow trends and mimic what other organisations in the same industry are doing; focus on a small number of products and services or diversify to new products and services. Students are also encouraged to reflect on the impact these strategies might have on the organisation such as whether there are changes needed in terms of the structure, the systems that are in place and the culture and capabilities of the organisation (Stubbs & Cocklin, 2008). Different learning content might call for different questions, but the main takeaway from this second step of the framework is that having a list of central questions can help focus the LSP session, and thus provide a fertile ground for discussion to occur.

Scope of session

Having identified a list of main questions, the final stage of designing an LSP session is to prioritise these and select how many should be discussed during a session based on time constraints and the number of participants. Additionally, identifying the learning outcomes of each session can offer a guideline in prioritising the main questions prior to deciding how many should be included within the session. Within this approach, there are three key issues that educators should consider when outlining the scope of the session; (i) how long the learning session should last; (ii) the size of the student cohort; and (iii) the amount of content which will be delivered during the session. In achieving these points, we also recommend that educators should design a detailed learning plan, and time each activity prior to delivering an LSP learning session.

Indicative Learning Plan. The following learning plan (Table 1) aims at providing a framework for educators that want to deliver one-hour responsible management seminars, fusing case studies on organisational sustainability with the LSP methodology. The aim of this example is to offer a better understanding of the structure of an LSP learning session in practice. Please note that the very first time you introduce a group of students to LSP, warm up exercises are of paramount importance for the students to understand how the LSP methodology works. Facilitating warm up exercises means that you have less time for case study related questions so the very first session might include one case study related question, unlike the following lesson plan that includes two.

Delivery

The LSP methodology offers a framework to support the delivery of learning sessions, during which participants are led through a series of exercises where they build Lego models in response to the educator's questions (Roos *et al.*, 2004). The aim of the Lego models is to help participants share their insights about the question at hand by using metaphors rather than to accurately represent entities found in the physical world (Grienitz & Schmidt, 2012). A single yellow Lego brick can for example represent the sun or a banana or a sandy beach. Meaning is embodied in the bricks by the creator of the model to support them in answering the question that is under discussion.

LSP realises constructivist learning theories and values by offering a framework for educators to design learning environments where participants get to participate in social processes that help them learn from their teachers and peers. Central to the LSP methodology is the idea of constructing knowledge from previous knowledge and experiences by getting workshop participants together and encouraging them to use Lego materials to make and express meaning that they share with their peers (Roos *et al.*, 2004). LSP offers an etiquette for participants and facilitators to follow and a core process which includes four stages of facilitation: the educator poses a question, students construct a Lego model answering the question, students share the meaning of their Lego models and finally the educator and students share reflections on the meanings shared (Kristiansen & Rasmussen, 2014).

Lego Serious Play sets

The available LSP sets were put together specifically for LSP workshops and include the following four sets:

Window Exploration set. This is the set that we use in most of our teaching sessions. Each bag includes enough Lego bricks for one student and when needed, educators can combine many bags together to give to teams to work together. The limited number of bricks included in this bag are enough for students to be creative and expressive but not too many that they have to spend a lot of time going through each individual piece.

Starter Kit set. That is an intermediate set that includes more pieces that the window exploration set and can be used in longer sessions where educators are looking to give students the time and opportunity to explore the learning content in more depth.

Identity and Landscape set. That is one of the two larger sets that should be used only in longer sessions, for example a two- or three-hour session where students can freely explore the learning content.

Connections set. The second large set of LSP bricks should also be used only in longer sessions and only when the aim of the session is to make connection between different agents, ideas, theories or events that connect to the learning content that is being discussed.

Etiquette

When facilitating LSP sessions for a student cohort for the first time, educators are advised to present one slide listing the guidelines that inform interaction between students during the workshop and try to reinforce these behaviours during the warmup exercises.

Table 1. Indicative lesson plan.

Lesson plan				
Bridge-in (motivation)	Achieve a deeper understanding of organisational sustainability issues and of the potential approaches addressing these issues			
Assessment	Informal assessment of the analysis of the case study of each student/student team			
Learning Objectives	Better understanding of how organisations approach sustainability issues, what the issues are and how the decisions made by organisational leaders affect the outcome of such undertakings.			
	Instructor activities	**Learner activities**	**Resources**	**Time (minutes)**
1. Introduction to the session	State aim of session and distribute register	Sign register	PowerPoint slides, register	5
2. Lego warm up exercises	Explain aim of Lego and facilitate students building simple Lego models (two exercises)	Build Lego models, discuss Lego models within their teams	PowerPoint slides, Lego bricks	20 (10 if students are familiar with LSP, with one instead of two warm up exercises)
3. Organisational sustainability case study	Brief presentation of the general background of the case study	Take notes of the major sustainability challenges presented to the organisation	PowerPoint Slides	10
4. LSP question	Introduce the first question: what are the main sustainability problems and risks that the organisation is facing? Build Lego model	Build Lego models responding to the question	Lego bricks, slides	5
5. LSP sharing	Facilitate sharing of Lego models, share their own insights	Share insights built into Lego models	Lego bricks	10 (timings during this stage of the process depend on student numbers, we would advise for each student to be given a minute.)
6. LSP reflection	Summarise themes discussed during the sharing stage, connect them to theory	Take notes of themes		5
7. LSP question	Introduce the second question: what are the potential solutions to these problems and risks, and what should the business do to solve these issues?	Build Lego models responding to the question	Lego bricks, slides	5
8. LSP sharing	Facilitate sharing of Lego models, share their own insights	Share insights built into Lego models	Lego bricks,	10 (timings during this stage of the process depend on student numbers, we would advise for each student to be given a minute to present their model.)
9. LSP reflection	Summarise themes discussed during the sharing stage, connect them to theory	Take notes of themes		5

Everyone builds. All students are expected to engage in building models using their Lego bricks, if a student is hesitant, try to motivate them by advising to start building even if they do not know what their model will represent. We have also found it beneficial to participate and build our own models during warmup exercises. Students feel more at ease when educators participate and are viewed as a good example for students.

Everyone shares. All students are expected to share the meaning of their models, sharing their perspectives and insights about

the case discussed and participating in the social co-creation of knowledge. The time students have to explain their model must be respected and there should be no disruption even from the educator.

The meaning of the model belongs to its owner. The insights shared by each student should be respected and not be interpreted in any other way, not by other students or the educator.

Ask questions about the model not the student. After a student has shared their insights, either the rest of the student cohort or the educator can ask follow up questions about the model that was presented. Questions should be focused on the model rather than the student.

Warm up exercises

Warm up exercises are of great importance, especially the first time a group of students participates in an LSP session. The aim of the warmup exercises is to help students learn the LSP etiquette, the LSP core process and to ease them into building their insights into Lego models by familiarising themselves with how to combine Lego bricks. Usually the warmup exercises are performed with each student using one Window Exploration Kit.

The following exercises can be used by educators to introduce LSP to students:

The tower. The tower is a simple introductory exercise where students are asked to build a tower as tall as possible and place a minifigure on the top (each Window Exploration has one minifigure in it). At the end of the build, the educator can ask the students to come up with a brief story about their tower, where is it based, what its most important characteristic is etc. The point of this exercise is to ease students into building with their Lego and get them into thinking that there can be more to their Lego bricks than just the bricks, that they can attach stories and meaning to their creations.

The bridge. The bridge is the same exercise as the tower only now the students need to build a bridge as wide as possible with a minifigure on top. Questions like 'where is your bridge located' and 'why is it useful or who is it useful to', can facilitate some conversation around the Lego bridges.

Introduce yourself. Asking the students to build a Lego model that explains an aspect of who they are can also act as a great ice breaker between students and teachers. This exercise can be the first time that students attach meaning to their models during the building process and not retrospectively. Other introductory questions to the session can be used to create some common ground among the learning community.

Core process

The core process of LSP is comprised of four distinct steps; (i) pose question; (ii) construct models; (iii) share meaning; and (iv) reflections. These four steps are represented in the following model as a loop starting from posing a question and ending in reflection before starting again with the next question (Figure 3).

The first step of the LSP core process is 'pose question', where the educator poses a question to the students. Adhering to the LSP etiquette guidelines where everyone builds and everyone shares, questions should be accessible to all students even those who haven't done the required reading. Educators should strive to design questions that allow for students to reflect on their own experiences, while allowing the educator to connect student insights to the theoretical knowledge that is being discussed in the classroom. This introduction to the question presents educators with the opportunity to assist students in conceptualising the main ideas or frameworks that they are supposed to engage with when answering the question with their Lego models. A very brief explanation of how the question is relevant to the case or theory discussed during the session can be helpful, especially if students seem to not know how to answer the question immediately.

After the question is given, a clear time must be set for the students to construct their models. Time given for the construction of models depends on the level of challenge and the time available. Three to five minutes is a good rule of thumb in most cases where the students have already engaged with the learning material or have some prior knowledge of the case discussed.

The second step of the core process is 'construct models', during which students build using their bricks. Again, it might be unusual for LSP, but we would advise educators to build their own models and participate in the discussion. Students should be reminded not to communicate with their classmates so they can concentrate on incorporating their own insights into their brick models without getting influenced by their peers.

Students that may be hesitant to construct Lego models could be motivated by educators to simply start putting together some Lego bricks even if they are not sure what they are making. Starting building can be helpful to convince hesitant students to participate. Students might also be hesitant to build because they did not understand the question, in which case educators need to offer further explanations to these students

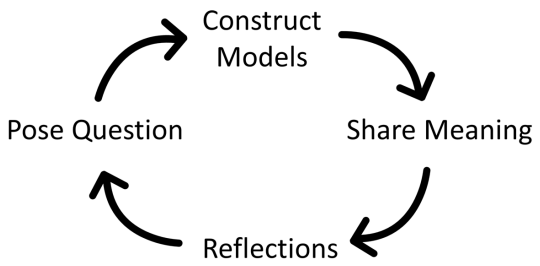

Figure 3. LSP core process.

individually. Educators must make sure that the time allocated to all students for constructing their models is respected and warn students when time is about to run out. An advice often given during LSP workshops is that anything that is not on the table will be shortly forgotten, meaning that all ideas embodied in the Lego models and shared by students will be more memorable compared to insights that are not part of the Lego model.

The third step is 'share meaning'. After students have completed their Lego models, educators ask them to take turns sharing the meaning of their models with the rest of the classroom explaining what their insights and ideas about the learning content under discussion are (Figure 4).

Thinking of time constraints, educators can give students and themselves one minute to share the meanings of their Lego models. After a student has finished sharing the meaning of their model, explanatory questions can be asked by the educator or the rest of the class to either clarify unclear parts of the description or help the student reflect on their model and how it connects to the larger theoretical discussion. The focus of the follow up questions should be on the model and not the student. It's the responsibility of the educator to also make sure that everyone respects the insights that are shared.

The fourth step is 'reflections'. During this last step of the LSP core process students are asked to briefly summarise the discussion and insights shared by the classroom and organise them into themes. The role of the educator is to connect the themes and insights shared with the knowledge that is being introduced during the module and the theoretical aspects that students might struggle to understand. In the interest of time, the educator can identify themes and summarise the discussion themselves (instead of the students) before connecting the discussion with the larger body of knowledge that is being negotiated.

The 'share meaning' and 'reflections' steps of the process provide salient examples of the social creation of knowledge theory (Hickey & Zuiker, 2005; Vygotsky, 1980) in practice, where the themes shared by the students and the educator reveal how new knowledge is created and negotiated between a learning community, while at the same time being influenced by the social and cultural context of the learning community. LSP is a pedagogical process where meaning and ideas can be unpacked and negotiated among the members of the learning community, offering the opportunity for pluralistic learning experiences including a diversity of different voices.

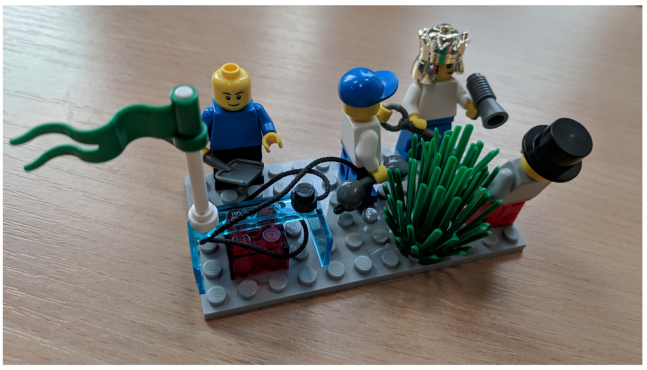

Figure 4. Concept sharing.

Conclusion

This paper has sought to develop a framework for responsible management education, teaching and learning delivery. Participatory teaching approaches like LSP present a salient opportunity for educators delivering responsible management content to enhance student engagement and strive towards a more open and inclusive teaching paradigm (Bovill *et al.*, 2011; Cook-Sather *et al.*, 2014; Gkogkidis & Dacre, 2020), one that will help shape more responsible organisational leaders in the future.

The emergent 'educator's LSP journey' framework outlines a process that can help educators design and deliver LSP learning sessions. Our research suggests that this is an area which has hitherto had limited attention (Aragon-Correa *et al.*, 2017; Dyllick, 2015; Muff, 2013; Snelson-Powell *et al.*, 2016), whereas we have argued that content, as well as delivery, plays a vital role in preparing and shaping the characteristics and thinking processes of future leaders (Dacre *et al.*, 2019). Through the use of the increasingly popular LSP approach, which is utilised globally as a multitier approach to solving business, environmental, economic, and social issues (Grienitz & Schmidt, 2012; Kurkovsky, 2015; Peabody & Noyes, 2017), we have offered a clear approach with practical steps to engaging with this process. However, this research also recognises a number of limitations and therefore outlines further research opportunities.

First, the conceptual teaching framework using LSP has been developed from both research and practice-based experience by the authors, however in this case it has not been empirically tested. We see this as an opportunity to further refine the model and revisit early assumptions around each step of the process. Second, scalability of delivery is considered as an element which requires further input. For example, the use of LSP is heavily reliant on the use of materials, which in this case are primarily Lego bricks, and require the educator's attention when teaching a manageable cohort of individuals. We therefore suggest that further investigation is required into examining and understanding the balance between group size and delivery of content focused on responsible education management. Third, this research outlines one innovative teaching methodology that can assist educators create effective learning environments for management students. We call for research into, and the conceptualisation of, other innovative teaching methodologies and tools that can assist business school educators deliver responsible management content.

In summary, in this paper we have developed a framework for educators who are interested in enhancing the delivery of

their responsible management education to better prepare their students for pressing future global challenges. If management as a practice is to contribute towards overcoming a range of increasingly diverse challenges, such as the environmental crisis, the structure of the economic and financial system and broader social and business concerns (Godemann *et al.*, 2014; PRME, 2008; PRME, 2014), it is important for tomorrow's leaders to appreciate and acknowledge the complexity of these interrelated issues.

Data availability

No data are associated with this article.

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Open Peer Review

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Version 1

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Holly Henderson
University of Exeter, Exeter, United Kingdom
Caitlin Kight
University of Exeter, Exeter, United Kingdom

Review by Dr. Holly Henderson and Dr. Caitlin Kight:

This paper had potential to have delivered an insightful contribution to the developing pedagogic body of knowledge of the use of Lego® Serious Play® (LSP) in an education context. LSP sessions produce outcomes and these are at the foundation of session design and reflection question development. This paper asserts that it “offers a departure from prior research focused on what constitutes responsible management education content, to provide a framework on how to engage in the teaching and learning process of this content.” This review will unpack the issues that the reviewers observe in the content having delivered 86 sessions to 3,267 people in a Higher Education setting. The reviewers are in full support of using LSP in this context, but feel this current paper doesn't provide enough specifics to allow someone to pick this method up and go in cold so as to do something that will allow LSP to interface appropriately in an HE environment.

Figure 1 shows the authors' proposed framework, (i) learning content; (ii) central questions; (iii) scope of session; (iv) etiquette; (v) warm up exercises; and (vi) core process. It is noted that there is no evaluation proposed in the feedback loop. For example there is no piloting of the session to ensure that meets it ILOs or session aim. There is no participant feedback, peer observation or self-reflection of the educator so it has no link to recognised processes such as Brookfield lenses.

Figure 2 shows the process as beginning with content, as does their description in the 'design and preparation' section (page 5). But where does that content come from? The reviewers would argue that the authors should start by thinking about intended learning outcomes, which aren't mentioned until page 6 and don't seem to be very central. The reviewers believe that the authors should know what their content is because they have ILOs not just for the session, but also for the module and the programme, and those will be associated also with learning competences, though. The point is that content doesn't just appear to you out of thin air. The reviewers were

curious why the authors don't acknowledge that or say much about which sort of content / ILOs might work particularly well with LSP -- because some are definitely a better fit than others.

In their discussion of LSP questions, the authors seem to focus on a series of individual builds, leading to individual thinking -- with nothing about group thinking, collaborative working, or generating an understanding that is more than the sum of each contributor's knowledge. This misses the whole point of LSP. It isn't just about remembering what participants already know, or hearing what other participants know, but actively comparing/contrasting/discussing these things so as to collectively shape a new and different collaborative idea. Their Q&A process seems very individualistic and not shaped to facilitate generation of new, different, advanced knowledge -- people can ask questions and then you answer, but they don't seem to emphasise weaving all those different answers together and moving towards some greater understanding than you started off with. Just because someone else says B while you said A, doesn't mean participants will suddenly understand and believe B; learning is where participants experience some change -- perhaps go from A to B or, together participants create a whole new C incorporating both those concepts. This deeper learning is not described here.

Related to both of the above, it is not clear to the reviewers how a facilitator would know that the activity has been successful. If you don't have clear ILOs that you're aiming for, and you're not leading a discussion in which you're supporting students in getting from A to B (or C!) so as to hit those ILOs, how will you get a sense of whether true learning is taking place, versus just an interesting conversation where people share their opinions? There is something missing here, and it's not just the evaluation bit that they mention at the end.

More logistically, the reviewers think the authors should discuss the inclusivity and accessibility aspect in more detail. How can you ensure it is okay, and not problematic, to prompt each student to share? (e.g., what if you have a student with social anxiety?). If you're asking a question that is meant to draw out personal understanding and opinion, how can you be sure that it isn't invasive or otherwise problematic, but is in fact appropriate and accommodating?

Building on the above, the reviewers would also disagree that questions should just be about reflecting on your own experience. You may have very little experience and therefore your reflections won't get you too far (which is why some questions might seem okay but be problematic -- you could have no understanding and then be forced to admit that in front of everyone). The authors also seem to contradict themselves about whether or not you do actually need to have done preparatory work and be familiar with the subject matter (page 8). The reviewers would argue that good questions aren't just about what facts you know or memories you have, but also about imagining new solutions (i.e., being creative/innovative) and applying knowledge) -- e.g., moving up the Bloom's taxonomy pyramid in order to do something more stimulating and enriching. Or, you could have a blend of questions that start at the bottom level and move to the top -- which they don't suggest.

The authors repeated emphasis on 'content delivery' worries the reviewers; what is presented is surely less important than what is learned? It sounds like just another method of achieving 'sage on a stage'. The reviewers think that the authors ethos is trying to move away from 'sage on a stage' but 'content delivery' doesn't really mesh with 'guide on the side' and perhaps they want to think about the mixed messaging. The reviewers would suggest talking about 'student learning' instead.

Another logistical issue is that the 'delivery' section on page 6 provides a good overview of LSP that the reviewers think should be moved earlier on when LSP is first being described, because this will help better contextualise and sell its intellectual rigour. 'Delivery' should just be about logistics, whereas the LSP background stuff can go in the introduction.

To conclude, the reviewers don't feel that the authors do a sound job of describing a session that would support real learning, or describing the process in sufficient detail that someone could follow the guidelines here to create a good LSP session. In fact what the authors have done is reiterated the original open-source method in their framework, which is not doing what the paper said it would. There is no novelty in describing how an existing framework could fit into higher education business schools offers unless that description offers an explicit, detailed guide to how the framework could/should be adapted to work with different audiences, contexts, and contents; however, this detail is currently lacking.

Is the rationale for developing the new method (or application) clearly explained?
Partly

Is the description of the method technically sound?
Partly

Are sufficient details provided to allow replication of the method development and its use by others?
Yes

If any results are presented, are all the source data underlying the results available to ensure full reproducibility?
No source data required

Are the conclusions about the method and its performance adequately supported by the findings presented in the article?
Partly

Is the argument information presented in such a way that it can be understood by a non-academic audience?
Partly

Does the piece present solutions to actual real world challenges?
Partly

Is real-world evidence provided to support any conclusions made?
Partly

Could any solutions being offered be effectively implemented in practice?
Partly

Competing Interests: No competing interests were disclosed.

Reviewer Expertise: Lego Serious Play

We confirm that we have read this submission and believe that we have an appropriate level of expertise to confirm that it is of an acceptable scientific standard, however we have significant reservations, as outlined above.

Reader Comment 06 Aug 2021

Richard Hull, Goldsmiths, University of London, London, United Kingdom

Dear Holly & Caitlin,
Just a quick Thank You for your very detailed review of this paper, it really helps me understand this area of LSP.
Kind regards,
Richard Hull

Competing Interests: No competing interests were disclosed.

Reviewer Report 03 March 2021

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Ian McCarthy
Business School, Simon Fraser University, Vancouver, BC, Canada

Please note the listed review questions on method and data do not relate to this type of paper, which introduces and explains a useful framework.

This is a good and interesting piece of work. It seems to be rigorous and is certainly highly relevant. I enjoyed reading it. It will shape how I teach.

I would have liked to have seen the ideas in the paper framed a bit more in the gamification literature. Explaining how the concepts and learning introduced in the paper fit with gamification frameworks proposed by Robson *et al.* (2015, 2016) and others.

This work is suitable for indexing.

Is the rationale for developing the new method (or application) clearly explained?
Yes

Is the description of the method technically sound?
Yes

Are sufficient details provided to allow replication of the method development and its use by others?
Yes

If any results are presented, are all the source data underlying the results available to ensure full reproducibility?
No source data required

Are the conclusions about the method and its performance adequately supported by the findings presented in the article?
Yes

Is the argument information presented in such a way that it can be understood by a non-academic audience?
Yes

Does the piece present solutions to actual real world challenges?
Yes

Is real-world evidence provided to support any conclusions made?
Yes

Could any solutions being offered be effectively implemented in practice?
Yes

Competing Interests: No competing interests were disclosed.

Reviewer Expertise: innovation, gamification, operations

I confirm that I have read this submission and believe that I have an appropriate level of expertise to confirm that it is of an acceptable scientific standard, however I have significant reservations, as outlined above.