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CURRICULUM & TEACHING STUDIES | RESEARCH ARTICLE

LEGO® Serious Play® in management education

Nathalie Benesova[1]*

Abstract: The paper outlines the design of a LEGO Serious Play (LSP)-based undergraduate management module delivered to a diverse group of students, and consequently evaluates the LSP workshops. It argues for the importance of participatory and co-creational approaches to management education, and demonstrates that LSP is a method that has the potential to address these requirements. This paper is unique in outlining the use of LSP throughout an entire intensive management module, including the assessment. It also contributes by utilising music to enhance the benefits of the LSP method. Student reflections have been used to evaluate the learning experience; additionally, I draw on my positionality as a lecturer and LSP facilitator to reflect on the benefits and challenges of the LSP method. The reflections were analysed using Braun and Clarke's (2006) thematic analysis. The findings identify LSP as a learning method where the benefits outweigh its limitations, and highlight that LSP also helped develop important management and employability skills.

Subjects: Entrepreneurship and Small Business Management; Teaching & Learning; Teacher Education & Training; Teaching Methodology & Practice; Teaching Practice - Education; Education - Social Sciences; Teaching Performance

Keywords: LEGO serious play; innovation in education; management education; business management; teaching and learning; higher education

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Additional information is available at the end of the article

1. Introduction

Management education is becoming increasingly popular in today's highly commercialised environment. For many management students, managing will become the focus of their careers. For many non-business students, managerial roles will become the means for their career progression. As a result, management educators face new challenges, such as teaching students from diverse backgrounds and having to develop enterprise skills in addition to subject knowledge. Emphasis has also been placed on employability to address the needs of prospective employers and increase students' chances of succeeding in the job market (Andrews & Higson, 2008; Succi & Canovi, 2020). Consequently, new ways of delivering and innovating management modules to address the

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challenges to match the needs of the contemporary business climate (Longmore et al., 2017; Petriglieri & Petriglieri, 2015) have been part of these developments.

Currently, the fast-changing business environment is also impacting on management education as the volatilities can make theories obsolete or insufficient much faster than in the past (Bennett & Lemoine, 2014). Therefore, there has been a shift towards developing a problem-solving, creative mindset in management students, in addition to the traditional content of management modules (Snyder & Snyder, 2008; Stinson & Milter, 1996; Succi & Canovi, 2020). There are different approaches to integrating skills-building in management curricula, such as the use of case studies, involvement in consultancy projects (Lycko & Galanakis, 2021), and a problem-based learning approach to management learning (Stinson & Milter, 1996; Boud & Feletti, 1997; Barbosa Da; Silva et al., 2018); however, their implementation can be relatively slow-paced. Institutional complexities, allocation of resources such as workload, and accreditation and quality control criteria are some of the most common obstacles (Ávila et al., 2019; Brewer & Tierney, 2010). Therefore, making the change to bottom-up delivery methods can be time-consuming and frustrating.

However, there are tools that can relatively easily assist the transformation from didactic approaches to a co-creational classroom experience, without the need for complex restructuring of the module syllabus or course curricula. LEGO Serious Play (LSP) is such a method. LSP is embedded in the principles of constructionist and constructivist learning, and as such gives students the ownership of their learning and enables them to develop important managerial skills (Roos & Victor, 2018). Indeed, LSP is held in high regard amongst management educators; however, its use is reported more in the context of inductions, library sessions, academic skills, or teamwork skills than subject learning per se (e.g. Edwards-Waller, 2020; Kight & Henderson, 2021; Martin-Cruz et al., 2022; Peabody & Turesky, 2018).

Building on the existing work of James (2013), McCusker (2014), Peabody and Noyes (2017), and Dann (2018), this paper aims to present a *design* and *evaluation* of a management module that employs a significant LSP component. The contribution to LSP design stems from the intensive nature of the LSP use throughout an entire management module, including for assessment. Additionally, it contributes to the evidence on the link between individual and group skills-building and problem-solving. Moreover, it utilises the approach to timing LSP challenges using music which, to the best of my knowledge, has only been used by Blair and Rillo (2016) in commercial settings.

2. LEGO Serious Play

The LSP method, developed by Victor et al. (2002), makes use of LEGO bricks in a facilitated environment that encourages exploration in learning. LSP draws upon Piaget's constructivism (Peabody & Noyes, 2017; Piaget, 1954; Vygotsky, 1962), constructionism (Harel & Papert, 1991; McCusker, 2020; Papert, 1986), the theories of play and flow (Nakamura & Csikszentmihályi, 2011; Primus & Sonnenburg, 2018; Sawyer, 2003), and importantly also, the constructionist connection between mind and hand (Csikszentmihalyi, 1996; Dann, 2018; Kurkovsky, 2015; Middleton, 2015), and the importance of metaphors in deriving meaning (James, 2013; Lakoff & Johnson, 1980; Schon, 1993; Victor et al., 2002). These theories assist experiential and active learning which bolsters creativity and problem-solving skills (Blackledge, 2018; James, 2015).

The ethos of LSP emphasises equality of opportunity, i.e. everyone builds and shares, and it is the builder who assigns meaning to the model. Sawyer's (2003) play and flow are crucial in encouraging the builders to trust the process and tap into the more intuitive and creative parts of their minds (Primus & Sonnenburg, 2018). Moreover, play fosters flow within and also between participants, which is essential to individual and group learning respectively. To this end, the hand—mind connection helps builders access their creative abilities by reducing the reliance on their thinking, which can lead to "analysis paralysis" (Dann, 2018; James, 2013; Peabody & Noyes, 2017). Play-

induced creativity also enables metaphorical thinking, which can help demonstrate ideas, and lead to the discovery of new meanings, and thereby constructivist learning (Lakoff & Johnson, 1980; Ortony, 1993). Simply put, LSP transforms learning into an experience.

The design of LSP workshops is part of the method and consists of four steps which are identical for individual and group builds: presenting the challenge; building time; everyone sharing the meaning of their models; and finally, reflecting on the builds and their meaning (Blair & Rillo, 2016; Kristiansen & Rasmussen, 2014; McCusker, 2020). The entire process is led by a lecturer-facilitator who is central to the first and the last stages. The building and sharing stages are (almost) entirely driven by the participants. The recommended time for each stage varies depending on the challenge and the depth that the facilitator wants the participants to access (Blair & Rillo, 2016). Time to build, on a more practical level, is also determined by the workshop length.

LSP can be used in individual and group builds, due to the universal familiarity with LEGO bricks, which instantly provides builders with a shared language (Jensen et al., 2018; McCusker, 2020; Vygotsky, 1962). However, regardless of the familiarity, it is recommended to split LSP into two stages—learning to use LEGO for educational and professional purposes, and building to address challenges and solve complex problems (Blair & Rillo, 2016; Jensen et al., 2018; Primus & Sonnenburg, 2018). Skills-building and problem-solving are equally important. Skills-building, importantly, promotes the LSP ethos, induces the "flow" state, and creates individual flow corridors. Flow corridors are creative "mind waves" from individual participants to their groups and potentially the entire workshop group (Primus & Sonnenburg, 2018). Skills-building consequently decreases uncertainty about the process, sets expectations, and puts participants at ease. It is also crucial in overcoming possible cynicism amongst participants about the method (Blair & Rillo, 2016). This is very common in both commercial and educational settings where LEGO often surprises participants.

3. Workshop Background

3.1. Management Module and Class Characteristics

The LSP method was used on an undergraduate management module delivered during the Leeds International Summer School (LISS, 2022). It is a "short-fat" module which runs over two weeks with daily three-hour-long classes. The module introduces management and its functions, leadership, and organisational structures, and the challenges and opportunities of managing in the contemporary business environment. One part of the assessment is group work on starting a company, which is assessed in form of a group presentation.

The module was designed to achieve the following learning objectives:

- Introduce the students to key dimensions of management (using the POLC—planning, organising, leading, controlling—framework) and highlight challenges which managers face in the contemporary business environment.
- Allow students to utilise knowledge and experience, and facilitate learning within a culturally and disciplinary diverse student group.
- Provide students with the opportunity to apply and reflect on key management concepts.
- Enable students to build essential management skills: develop a problem-solving mindset, creativity, communication on management issues, and a cooperative attitude to problem-solving.

Over 20 level-2 undergraduate students attended the module. Students in the class came from different backgrounds—academically and culturally—from Australia, Canada, Denmark, Ghana, Hong Kong, India, Indonesia, Japan, Mexico, South Korea, Switzerland, Thailand, and the US, and a wide range of courses, including management, engineering, architecture, law, finance, social sciences, politics, data science, clothing and textiles, and computing sciences.

The rationale for including LSP in the module design was twofold: first, the LSP method was closely aligned with the module objectives and the level of study; and second, it was suitable for a class of students from diverse backgrounds. The module is designed to introduce the concept of management and its core functions to students, and to develop confidence in management thinking and a creative problem-solving skillset. A number of options, such as case studies, Play-Doh or simulations, were initially considered to address this objective. LSP was selected due to its constructionist properties, appropriateness (Play-Doh is still a relatively new method in the academic context and seems more useful in natural and medical sciences purposes (Lace-Costigan, 2017)), openness to a wide range of ideas and experiences (simulations and case studies do enable experiential learning but do not always embrace all ideas (Abdullah et al., 2013; Healy & McCutcheon, 2010)), and its link to management and organisations (the fact that LSP is used by large organisations such as IKEA, Microsoft, and Hakuhodo makes it more convincing (Rillo, 2016)). In addition to addressing the learning objectives, LSP was also used to bridge some of the cultural gaps and enable students to bring in their culture-specific and subject-specific knowledge (Jensen et al., 2018; McCusker, 2020; Peabody & Noyes, 2017). Indeed, LSP is known to give students a common language due to the universal knowledge of LEGO® (Jensen et al., 2018).

3.2. LSP on the LISS Management Module

LSP was central to the management module; therefore, a careful consideration of its implementation in the module design was crucial. Several aspects were particularly instrumental to the workshop design and the implementation of individual workshops in the module: (i) the choice of LEGO kit and distribution of bricks between students and groups; (ii) the development of LSP building skills for individual and group building; (iii) the timing of LSP challenges; and (iv) workshop design and schedule, and the expected LSP outcomes and their alignment with the learning objectives of the module. The following text will detail these considerations.

3.2.1. LEGO Kit and Bricks

Workshops on the summer school management module made use of the Identity and Landscape Kit (LEGO, 2022). The Identity and Landscape Kit was selected as my budget only allowed me to buy either one large set of LEGO bricks, a set of Window Exploration Bags (LEGO, 2023b), or a Serious Play Starter Kit (LEGO, 2023a) for each student. These sets are shown in Figure 1 for illustration. Since the majority of challenges were built by groups and required different bricks, including animals, to enable metaphorical building (James, 2013; Victor et al., 2002), small kits

Figure 1. LEGO Serious Play, Identity and Landscape, and Window Exploration Kits.

Source: LEGO (2022) and LEGO (2023b; 2023b, 2023a).

would not be sufficient. The Identity and Landscape Kit includes a wide range of bricks of different colours and shapes, human figurines, animals, and "connectors"; this is all essential to satisfy the learning objectives of the module which require deep exploration of management topics, i.e. the use of a large number of bricks, and learning to work with different and significant resources represented by the bricks. One of the rationales behind this choice was to approximate the business environment where often large and diverse resources need to be managed and meaningfully organised (Barbosa Da Silva et al., 2018). This would not be possible using the sets from Window Exploration Bags or even the Starter Kit.

LEGO bricks were randomly distributed to tables, which did not follow the standard LSP approach where every participant/group has identical set of bricks. It might have been beneficial for students to have identical bricks; however, whilst random bricks could be argued to present limitations, such as the inability to demonstrate that individual builds always differ even with identical resources (Blair & Rillo, 2016), there are also benefits which support the module learning objectives. Indeed, working with different bricks teaches that resources differ, and it is best to make the most of them; therefore, it better reflects the business environment. This supports the learning objective of introducing the contemporary business environment and challenges that managers and organisations face; diversity, complexity, and inconsistencies are some of the main concerns, thus different bricks were considered more representative of these issues than homogenous sets. This is additionally supported by the "VUCA" view of the contemporary business environment, i.e. volatile, uncertain, complex, and ambiguous (Bennett & Lemoine, 2014) which is becoming increasingly central to the ethos and delivery of business and management modules and courses.

3.2.2. Individual and Group Skills-building

The module involved individual and group building challenges. The inclusion of both types was essential to meeting the module learning objectives and effective working and learning with LSP. Since one of the module objectives was to bolster management thinking and creative approaches to problem-solving, it was essential that these skills were carefully aligned with the use of LSP (Blackledge, 2018; James, 2015). Starting with individual-level challenges and consequently moving to group challenges gave students time to familiarise themselves with the method, thereby creating a level playing field for the group builds (McCusker, 2020). Had individual skills been skipped, the possibility of less confident students feeling left out of the group building challenges would have threatened the learning objective to solve problems cooperatively (Álvarez-Huerta et al., 2021). Additionally, having to address challenges individually as well as collectively aligns with the mode of managerial working which requires the ability to both think independently and make decisions collectively.

Therefore, two skills-building sessions were essential—for individual- and group-building skills. This may seem like duplication, but the social process of building in a group is not a mere extension of the individual building experience and, as such, requires a different approach from all participants. Day one of the module focused on individual LSP and day two on group LSP which developed the LSP skills in a scaffolded manner (Murtagh & Webster, 2010). LSP sessions on both days had one skills-building and one problem-solving challenge. Building skills sequentially early on helped students gain a good grasp of LSP, and addressed the issues described above. The LSP method could then be used throughout the module to build various challenges. The design of these sessions will be discussed in more detail, together with the challenges below, to provide a clear sequence of the LSP workshops.

3.2.3. Timing of LSP Challenges

Timing and setting the building challenge correctly is crucial for LSP to work. The challenge must be very specific with no ambiguity (Blair & Rillo, 2016). To this end, the wording should be relatively succinct to make the task clear and highlight the keywords that serve as "hooks" that participants use. Some examples are: build a manager, build a leader, what managers do in an organisation, and what the challenges are of the contemporary business environment. The challenge then

determines the time dedicated to building. Generally, less complicated and individual-level tasks take between three and five minutes, whereas more complex and group-level builds take around 10 to 15 minutes. However, these are very general rules. The times can be much shorter or much longer, depending on the activity or the desired outcomes.

Timing can be carried out in different ways. Following the advice of Blair and Rillo (2016), I used music. The choice was guided by the need to create a more relaxed environment in which students felt they could create freely and immerse themselves in the building challenges. There are a number of considerations when using music, such as the tempo, volume, and type of music (Dalton & Behm, 2007). It is also noteworthy that research on the use of music and its impact on human mood and behaviour is inconclusive and possibly highly contextual. For instance, Dalton and Behm (2007) found that music and noise impacted task performance in a similar and negative way; however, their study focused on driving which is a context that differs from learning and creating. Another study of drivers, however, found that faster music increased and slower music decreased the level of driver arousal (Navarro et al., 2018). This psycho-physical connection (Hodges & Wilkins, 2015) is known to marketers too and is used in different areas of enhancing sales through the shopping experience (Bruner, 1990). The final choice of including music to time the LSP challenges was made on the basis of Blair and Rillo's (2016) positive experience of using music during LSP workshops, and research suggesting that music, provided it is appropriate, has a positive impact on humans, including their mood, learning and intellectual functioning, and important qualities such as empathy (Ferreri & Verga, 2016; Gottlieb, 2019; Hodges & Wilkins, 2015; Juslin et al., 2015; Schellenberg, 2005).

The use of music, especially in educational settings, can be controversial, and a number of points have to be considered: firstly, it is essential that the institutional licence enables the use of music and audiovisual materials in teaching—it is common for audiovisual materials to be used in classrooms in higher education but they must not be reproduced by, for instance, uploading the lecture or seminar recording without the explicit consent of the owner, i.e. any class recordings must be paused for the duration when music is used (e.g. University of Leeds, 2023). Secondly, although music, and some sounds particularly, have been found to be universally enjoyed (Gottlieb, 2019), the same does not apply to music genres, and therefore the songs have to be chosen very carefully, and the facilitator needs to ensure their educational, participant-linked and cultural appropriateness. Lastly, there is a possibility that some students might have difficulties concentrating in an environment with background sound—although this concern is greater in the case of children than adults (Jafari et al., 2019; Klatte et al., 2013).

Whilst the first two issues can be addressed by careful consideration by the facilitator and compliance with institutional licensing, the latter is more problematic. To address the potential issue of background sound, the facilitator can ask the LSP participants if they are comfortable with the volume settings; this is in line with Jafari et al. (2019) who found that the negative impact of background sound becomes significant above 95 dBA. However, regardless of the use of music, eliminating background sound during LSP workshops is never entirely possible due to the nature of the activity. Moreover, when students build in groups, they simultaneously discuss what they are building, which generates sound. Music therefore adds to the background sound, but music alone does not create background sound in LSP workshops. After careful consideration of the challenges and benefits of using music in my LSP workshops, I decided to employ it.

Students were given one song for short activities and around four songs for longer activities. Individual songs had to be well known to most, and ideally all, participants. When using multiple songs, it was important that the last song counted for approximately a quarter of the allotted time and had an attention-grabbing start. The first few seconds of the last song were played before building commenced, and students were told that when they heard the tune again, they would have four minutes left. This approach helped induce a more relaxed environment which, for many students, replicated their study habit of listening to music whilst working (Kotsopoulou & Hallam,

2010; Lehmann & Seufert, 2017). More importantly, however, using songs instead of a timer helped students detach from time, and enabled deeper immersion in the activity. Additionally, it lifted the atmosphere and helped students create from a happy place. Indeed, the effect of music on human behaviour and mood is well known (Gottlieb, 2019; Hodges & Wilkins, 2015; Kreutz et al., 2008), and it works extremely well in the LSP method.

3.2.4. Workshop Design and Schedule, and Expected LSP Outcomes

The design and schedule of the LSP workshops in the management module followed consideration around brick distribution, timing, the connection between building to develop skills and the challenges, and importantly also the learning objectives of the module. As indicated in Table 1, LSP was used mostly at the start of a new learning unit to utilise the benefits of student-centred learning provided by the method. This meant that LSP was first used on day one to explore the concept of a "manager" and later on when opening the topic of contemporary management in the 21st century, i.e. when moving to the external environment and exploring its complexities and their impact on organisations and managers. The last LSP challenge was included later to help

Table 1. Module and LSP workshop overview

Day	Syllabus	Assignment	LSP Workshop	Challenge
Day 1	Introduction to management discipline.	Introduction to assignment task and grouping.	Individual Skills	Build a tower.
			Individual Challenge	Build a manager.
Day 2	Evolution of management and the contemporary business environment.	Brainstorming company ideas, business plan development.	Group Skills	Build today's weather.
			Group Challenge	Build what managers do in today's business environment?
Day 3	Planning, strategy, internal and external environment.	Analysis of external environment – PESTLE and industry.	None.	None.
Day 4	Leadership theory, styles, personality.	Identification of suitable leadership style.	None.	None.
Day 5	Organisational structure and staffing.	Design of organisational structure using LSP.	**Assignment Challenge**	Build the structure of your organisation.
Day 6	Field trip with focus on leadership and its impact on the success of a business.			
Day 7	Managing teams and controlling in organisations, personality and team roles.	Progress presentations.	None.	None.
Day 8	Managing innovation and change, innovation and competitiveness, managing change in the workplace.	Formulation of why the company will be a success to convince others to invest in it, finalising presentations.	**Group Challenge**	Build changes to the workplace during the pandemic.
Day 9	Group presentations, module reflection.	Final presentation (assessed) and 'Dragons' Den' investment game.	None.	None.

Source: Developed by the author.

students build the organisational structure of a company they had established during the module which directly contributed to their group assignments. The design of these sessions will be discussed in detail in the following section; however, the rationale and the alignment of each LSP session with the module objectives and the expected LSP outcomes need to be discussed first.

The first LSP challenge was an individual-level build, split into building a tower (skills) followed by building a manager (subject). The workshop aim was to introduce students to LSP and help them get used to using LEGO bricks for learning and thinking about fundamental management concepts. Building a manager was a very effective challenge as it is a concept that seems simple, yet everyone might see this differently, based on their subjective expectations, experience, and cultural background. This is particularly relevant in a diverse class where the ethos of LSP, which emphasises the importance of a judgement-free discussion, was expected to help students adjust to an environment with views and understanding that were different from their own (McCusker, 2020). The ability to communicate about management topics is also an important skill included in the module objectives; having to synthesise different views and develop understanding of others assists this objective and promotes a cooperative attitude which is essential in good managers and importantly also for collective problem-solving—a skill necessary for good team working (Blackledge, 2018; Snyder & Snyder, 2008).

A collective approach to problem-solving presented a scaffolding for group-level LSP builds (Blair & Rillo, 2016). The challenges asked groups of students of five to "Build today's weather" (skills), and consequently "Build what managers do in the contemporary business environment" (subject). Building the weather might seem irrelevant; however, it is something much more tangible than managerial concepts as it can be directly observed. It was included to help students to learn to negotiate the use of bricks and build together as a team, to set expectations and instil the inclusive ethos of LSP group building, and to open a flow corridor within each team (Primus & Sonnenburg, 2018). These skills naturally translate into successful team working and enable students to collaborate to address more complex and abstract challenges, such as "what managers do in the contemporary business environment". The management challenge enabled students to creatively and collectively solve problems and learn to communicate about different management issues, thereby addressing an important learning objective. Moreover, it was a challenge exploring complexities and ambiguities of the external environment, i.e. "VUCA" (Bennett & Lemoine, 2014), for which working within a diverse group is ideal as it simulates the complexities of the diverse environment in which companies operate, thereby teaching students to navigate complexities and make decisions in face of ambiguities. The group harmonisation was also expected to have a positive impact on consequent teamwork on the assignment which asked students to establish a hypothetical company and to develop a business plan and present this as a group in "Dragons" Den' style at the end of the module.

Assessment in groups is often problematic, and it is not uncommon for students to struggle to collaborate (Hassanien, 2008). Regardless of the challenges students face when working in teams, team working is one of the most important skills for a successful career in management (Tewari & Sharma, 2012). Therefore, LSP workshop pertaining to the assignment was included later in the module. Students built the organisational structure of their company during this LSP challenge. Organisational structures are not an easy subject to teach as the theory offers ideal examples and highlights that in reality they often overlap; students often find it difficult to imagine how this works and what drives the decisions for the choice of a particular structure or a combination of them. LSP gave them the opportunity to actively make those decisions for their company. Active engagement with theories of organisational structure and their direct application was expected to help develop a much deeper understanding than a didactic approach would have. Additionally, LSP was used for the assignment build to push students to make concrete decisions and help them progress with their work ahead of the presentation.

The design and outcomes of the workshops from the first two days and those linked to the module assessment will be outlined next.

4. Workshop Design and Outcomes

Day one and day two workshops best demonstrate the structure of and link between skills and challenge builds, and individual- and group-level builds. The assignment-related build on day four demonstrates how LSP creates a visible link between the theory introduced in a lecture on the same day and its application to a task that mimics the real-world business environment, and thereby bridges the gap between theory and practice.

4.1. Workshop 1: Individual-level Builds

The LSP method may best work in groups, but unless individuals have at least some degree of confidence in using LSP, a group build may fall into the trap of a few strong individuals overpowering the rest of the group, similarly to more traditional groupwork settings. The first workshop took place when students hardly knew each other and had no knowledge of the facilitator. The UK teaching environment was also new for many, which presented a challenge. On the other hand, only one of the students had prior experience with LSP, which was fine, as it is desirable that all students start with the same level of experience. A traditional tower build was used to introduce the method. The task was to "Build a tower" without any further specifications. James Brown's song "I Feel Good" was used as a timer, giving students less than three minutes to build. Figure 2 shows all the towers built during this skills-building session.

Students were asked to bring their builds to one classroom area where they could all be seen easily by everyone. A sharing stage always follows the building stage, and traditionally everyone shares. However, since this was a skills-building stage, it was guided by the facilitator more than other builds, and only three towers were randomly selected for sharing in order to save time.

Once students had shared, a few important aspects had to be highlighted. Most importantly, it is crucial that students focus on the build when explaining it to others. This is something most sharers struggle with, due to the difficulty in breaking away from more traditional ways of presenting. There was a strong tendency to establish and retain eye contact when sharing, which is not in line with the LSP ethos (Blair & Rillo, 2016; Kristiansen & Rasmussen, 2014). The focus must be on the build, not the sharer. In conjunction with seeking eye contact, students also sought approval from the rest of the class. This is most likely due to the Taylorism-induced objectivist tradition in management learning, and students' tendency to search for the correct answer (Vrasidas, 2000). However, it is noteworthy that with the business environment becoming more volatile with new approaches and phenomena emerging regularly, the academic approach to management thinking reflects these different manifestations of the management function (Bennett & Lemoine, 2014). Building self-reliance in LSP is important for group builds where students need confidence to contribute to their group builds.

The difference between presenting and sharing is crucial and must be highlighted by the facilitator, but it is not the only task for the facilitator at the skills-building stage. The facilitator needs to instil the importance of the builder's ownership of the meaning and to prevent anyone

Figure 2. Individual tower builds.

Source: Author's image.

else from imposing their own interpretation on the builds of others. The sharer can be asked questions to clarify the meaning of their build, but interpretations should never be imposed. This may seem too strict, but it is what makes LSP workshops a safe space where everyone can share without being judged. It also emphasises the value of individual views, as opposed to searching for "one-size-fits-all" definitions or answers. The facilitator can support this further by encouraging participants to see that with the word "tower", everyone imagines something slightly, or entirely, different. With the ethos and rules now set, and increased familiarity with the method, the participants were now ready for more complex, abstract, or theory-oriented challenges.

Students were asked to consider the meaning of a manager before joining the module; for instance, what a manager looks like, what characteristics they have, and what they do. The challenge for the LSP session was to "Build a manager", which was an individual-level build. Students had approximately four and half minutes, the duration of the Empire of the Sun's song "We Are the People". This task immediately followed the tower challenge and gave students the opportunity to apply and develop their newly acquired building skill and, importantly, practise the use of metaphors with a management concept. Once the time to build was over, students once again brought all their builds to one classroom area. This time, however, everyone shared. Some of the builds are shown in Figure 3 where the use of metaphors is indicated.

Everyone had approximately 30 seconds to explain their build to the rest of the class. Not all students used metaphors at this point. However, many did, and it helped those who did not to learn how to use them. Afterwards, five minutes were dedicated to reflection. In line with the expected outcomes, the main message was that everyone interprets the word "manager" differently, often depending on cultural background and personal preferences. However, there were also similarities between the builds, and these were highlighted by the facilitator and linked to management theory and the module syllabus. With students now more familiar with the LSP method and understanding its link to the module and the potential it had for their learning, they were ready to build in groups.

4.2. Workshop 2: Group-level Builds

Groupwork is always somewhat challenging with new classes, mostly due to difficulties in "breaking the ice". However, easing new groups into working together in a cooperative manner that promotes inclusion and engagement is one of the most important benefits of LSP. Students were first randomly split into groups of five. These groups would work together for the remainder of the module. Two challenges were given to students on day two—one that focused on LSP skills-building in group settings, and a management-related one.

Challenges for building skills may seem redundant, given that an individual-level skills-building session took place on day one. However, in the case of a group-level build, the session facilitates harmonisation, as well as skills-building. Group building requires different skills and style, much like more traditional teamwork does compared to individual work or assignments. Had there been no

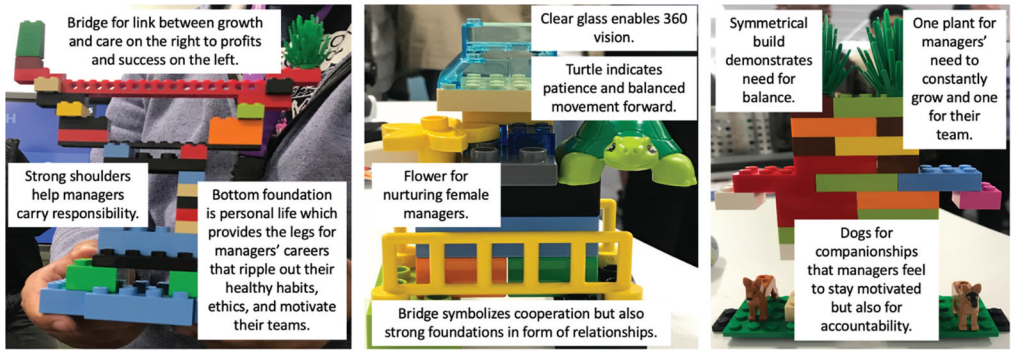

Figure 3. Example of individual manager builds.

Source: Author's image.

individual-level session prior to this workshop, this is where students would develop those skills from day one, with greater assistance from the facilitator. The task was to "Build today's weather" during four minutes of Pharrell Williams's song "Happy". The resulting builds are shown in Figure 4.

Sharing as a group can be quite challenging in more traditional settings. However, students knew that everyone from their group would have to explain some part of the build. This is made much easier with the LSP method, because everyone contributes to the building process at some point, and therefore has a specific story to tell about some aspect of the group build. The role of the facilitator and the process of sharing and reflecting is then identical to the individual level, albeit extended to the group settings.

Once groups had been harmonised, they were ready for a more complex management challenge. The theme of the class was "Management in the 21st century". The task was related to the class topic, and students were asked to "Build what managers do in a contemporary business environment" in 15 minutes. Four songs were played (Ethan Martin's "Like Icarus We Fly", M83's "Wait", Foster The People's "Pumped Up Kicks", and M83's "Midnight City"), and the first few seconds from the last song were played at the beginning to indicate when approximately four minutes would be left to build. Figure 5 shows the builds and highlights some of the metaphors.

The sharing and reflecting stages were identical to those described above. However, they took place at each group's table, to prevent some of the more complex models from breaking into pieces. Students were encouraged to ask questions about other groups' builds and to share what caught their attention. It was also interesting to highlight common themes between the builds and contrast them to the unique aspects of the builds. The facilitator could then link the models and

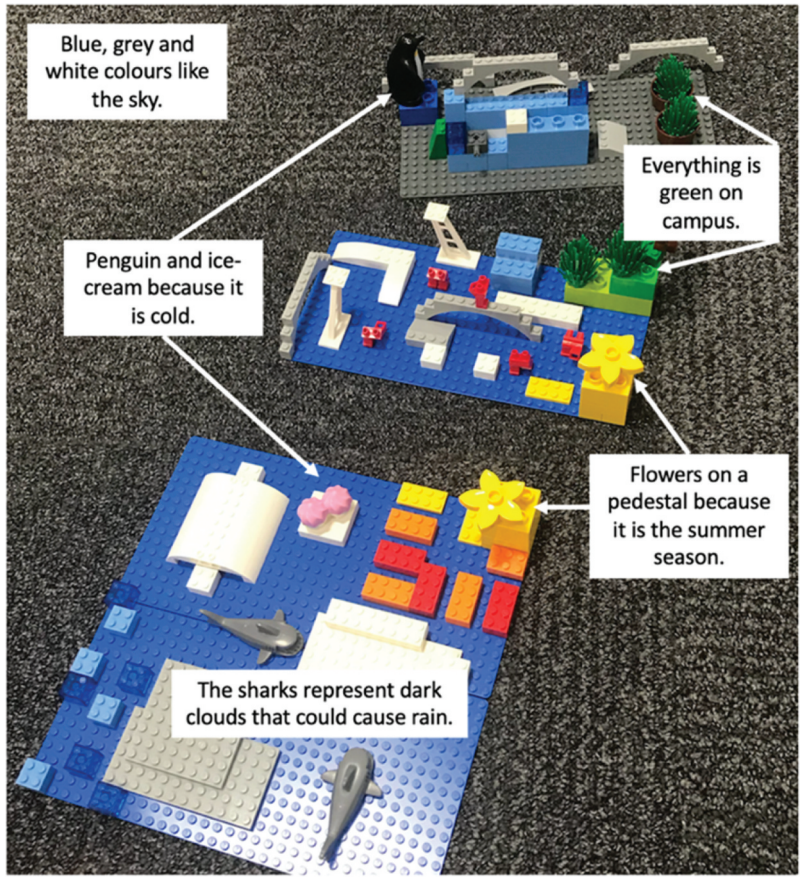

Figure 4. Group weather builds.
Source: Author's image.

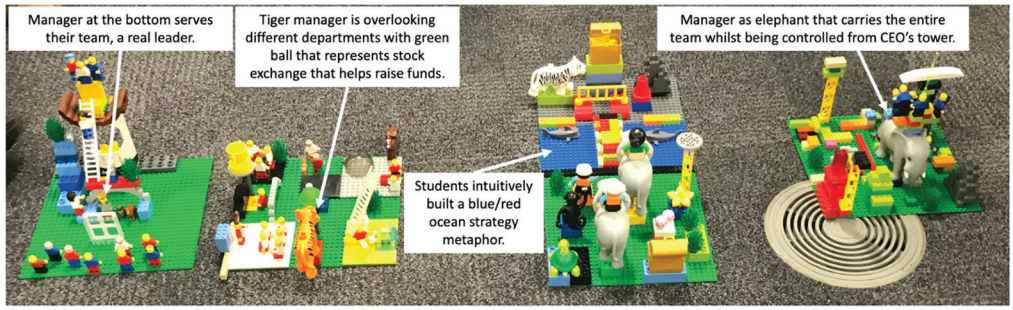

Figure 5. Group 'what managers do' builds.

Source: Author's image.

interpretations to management theories. From this point, students were ready to use LEGO to address any challenges or answer any questions later in the module. This included the use of LSP to develop their company structure for the group assignment.

4.3. Workshop 3: Assessment Builds

Workshop three was an LSP session that took place mid-module. Its main purpose was to support students with their assignment by connecting theories of organisational structures, which are relatively abstract, to the companies that students were designing for their assignment. The design of this session was slightly different. The ethos, however, remained the same. The challenge was to "Build the structure of your company", and the task followed a number of group discussions and analysis of the external environment in previous classes. Students were given 15 minutes to build this challenge. This time, no music was played, and students were told that they could spend more time building if they needed to. This approach was taken for two reasons—students build better and create more freely without the pressure of limited time, and because they needed to get the task right for their company and get the facilitator's feedback during the process.

The challenge followed a lecture on organisational structures. After 15 minutes of building, as the facilitator I joined each group and asked students to share their model. This enabled me to develop a very clear understanding of the intended structure and ask questions to clarify anything. It gave me the opportunity to act as a consultant, rather than a theoretical lecturer—largely due to the problem-solving mindset LEGO induces. This activity therefore involved progress feedback, which was immediately implemented into the model build. The images in Figure 6 show the organisational structures built in this session.

Once the models had been built, students were encouraged to take photos and include them in their presentations. Since the presentations took place on the last day of the module, it extended the relevance of the LSP session to the end of the module. The LSP method was most beneficial, not only in making the classes more engaging, but also in making theory more relatable and thereby improving learning. Student feedback, reflections, and some of the advantages but also potential challenges for use in management education in higher education will be discussed after the methods.

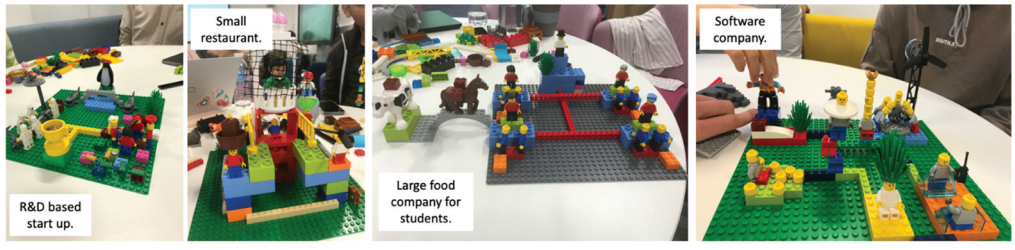

Figure 6. Company structure builds.

Source: Author's image.

5. Methodological and Practical Considerations

This teaching case builds on my delivery, and complements it with my observations and reflection and students' reflections on the LSP method in a qualitative manner. Both the students' and my reflections loosely follow Gibbs' reflective cycle and its elements—most notably thoughts, feelings, and emotions (Gibbs & Andrew, 2001). My notes and thoughts were kept in a diary and reflected on with the intention of improving the use of the LSP method within my management module. I have also discussed with academic colleagues my experience and how it could help improve the delivery of modules on management courses.

Student feedback on the LSP workshops within the LISS management module was obtained via individual written reflections. Students were asked to reflect on the LSP workshops in terms of their experience of building in groups, and of management learning. Gibbs' reflective cycle was introduced to assist them with the reflection (Gibbs & Andrew, 2001). Whilst the students were told they did not have to use this model, it offers useful ideas about what they might consider in their reflection, such as emotions, which students often overlook (Bassot, 2020; Williams et al., 2020). The reflections were consequently analysed in line with Braun and Clarke's (2006) protocol for thematic analysis. The main themes will be discussed later in a separate section.

Ethics were an important part of the considerations for obtaining student feedback and public sharing of any of the module content. Therefore, ethical approval was obtained from the University of Leeds. Additionally, the research design followed recommendations issued by the Leeds Institute for Teaching Excellence (LITE, 2018) and the British Educational Research Association (BERA, 2018). Guidance from LITE and BERA was particularly important as it highlights issues pertaining to education research. The main concern was the power dynamics between my students and me. There is an increased possibility of students providing the answers they think the lecturer wants to hear, or they might be concerned whether the use of data would influence their success on the module (LITE, 2018). This is also true for giving informed consent. In order to address this issue, the possibility of using any of the module content for publication was not mentioned until the end of the module. Students were told about the prospective research and asked to consider consenting to the use of their data after the assessment had taken place. It was emphasised that there was no obligation to give their consent and, as a result, not all students wished their data to be shared.

6. Student Reflections on LEGO Serious Play

Student reflections were analysed in line with Braun and Clarke's (2006) protocol for thematic analysis. Since students had been given three general areas to reflect on—working with LSP, subject learning with LEGO, and working in groups—the themes centred around these topics. However, an additional theme of the benefits and limitations also emerged during the data analysis. These themes will be presented in this section.

The experience of working and learning with LEGO was generally positive. All but one student reported that they enjoyed the LSP workshops and that it helped their learning. Unfortunately, the student who did not like the method did not give consent to publish their views and experience; however, the remaining students consented. The student experience of LSP is best understood by splitting it into the initial reaction, skills-building, and working with LEGO after the skills-building phase. Initially, since only one student had experienced LSP before, most students were *sceptical*, or did not understand why LEGO was in the classroom. Several students even reported they felt *uncertain* and lacked the *confidence* they would be able to use LEGO for LSP or build metaphors with it. However, these feelings were also mixed with *curiosity* and *excitement*, and many students also used the word *playfulness*. During skills-building, all students reported that these concerns dissipated and were replaced with *curiosity* about the challenges they were building. One student said that "*it was amazing how quickly I was just building and working on the* [challenge] *without even thinking about Lego*," which was a very common experience amongst the students.

Students reported that whilst building challenges with LEGO, they found it "*much easier to build it than say it*", which was particularly common for students whose first language was not English; however, even many native speakers "*felt* [building with LEGO was] *much easier and very natural, as if you knew what you were building without knowing anything about the topic at all*" – this was a commonly expressed experience amongst the students. It is also noteworthy that students often mentioned the sharing phase. Whilst many felt *weird* or *uncomfortable* during the sharing of models, they later appreciated the environment of "*acceptance of what I was saying my model meant*" and "[not] *having to worry about giving the right answer because at the end of the day it was up to everyone to put the small pieces together and come up with the correct answer*". However, one student suggested they found it "*difficult not to correct what others were explaining*", i.e. not to assign their own meaning to others' builds. The reflection phase has not been mentioned in greater detail, but this is understandable as it was a group discussion largely facilitated by me in order to establish the links between the builds and the theory.

The reflections on team working and building in groups were quite unanimous. Students found it "*surprising how much easier it was to start* [working on the challenge] *than if we were just having a discussion*". Two themes can be observed in the data in relation to group building—students who are outgoing and confident communicators appreciated that they "*didn't have to force anyone to talk*", and those who are naturally more shy liked that they could "*participate without having to say anything or talk first, which makes* [some of them] *feel anxious*". Additionally, there were several students who reported that LSP helped them understand their team members better because they "*could see how much everyone is contributing just by looking at the Lego which is very different from a discussion where words cannot be seen*". Overall, students had a very positive experience of team working using LSP.

Subject learning was also an important theme in the reflections. The general view was that LSP helped students "*get into it and think about the* [theories]" and students appreciated the input they had in the discussion. One student suggested that "*this idea of blue sky thinking before doing anything specific or learning the theory was great*." Another student's comment explained one of the reasons why: "*I am an engineering major, and so to be able to think about a manager in terms of the environment I know and have a good familiarity was really like helpful … and I guess others were bringing in the knowledge from their major*." However, the reported levels of learning differed among students—some suggested that the LSP was "*a fun add-on*" to theory, some felt that it was "*quite broad and in general, so* [they were] *not sure how much it helped* [them] *with* [their] *understanding of the theoretical stuff*", and some thought that the knowledge built during the LSP workshops either "*helped* [them] *practise what* [they] *learned*" or "*added more depth*" to it. One LSP workshop, however, was highlighted as the most helpful one—the assignment workshop. One student explained the possible reason why: "[we] *just worked with a very specific structure* [of the assignment company] *which made it much more concrete compared to building a manager, or the one* [about] *what managers do, that was all a bit too abstract … but the one with our company* [i.e. the assignment LEGO build] *was good, and most useful*."

These different experiences highlight that, despite many positives, there were some limitations perceived by the students. Most of the benefits have been highlighted above. However, the reflections also highlighted positive experiences in terms of students' emotions—particularly those whose first language was not English or were from cultures with greater power distance or fear of making a mistake: *also if it was difficult when we started to understand how other* [students] *will judge me and after I share my manager* [build], *I know it is fine* [to have my own opinion]. There were, however, also several drawbacks of the method and how it was used, two of which were prominent themes in the reflections. First, many students felt that more could be done during the reflection stage, mostly to "*be able to make the link between what* [they] *built and the theory* [they] *talked about during the lecture*". Second, some of the reflections also highlighted that "*there was too much LEGO*." Although this was only highlighted by a few of the students, it is an important comment that needs to be taken into consideration.

These themes which emerged from the student reflections offer a valuable insight into their experience of learning with LEGO – on a practical but also personal and emotional level. The following section will discuss the benefits and limitations of LSP considering the student reflections and my reflection as the lecturer-facilitator of the LSP workshops.

7. Benefits, Challenges, and Facilitator's Reflections on LSP

LEGO Serious Play was an innovative, engaging, inclusive, and extremely effective tool for the module delivery. It helped meet the learning objectives and aligned with the expected learning outcomes. LSP not only helped facilitate learning but also induced a collaborative atmosphere in the classroom and created a bridge between the students and me as the lecturer-facilitator. The method has many benefits, but it is not without challenges, and although the benefits certainly outweigh the limitations, they need to be disclosed. Additionally, there are certain aspects that need to be considered when using LSP for educational purposes. I will first discuss the student reflections, reflect on using LSP as a teaching method, and then highlight several ways in which the outcomes of the LSP workshops can be extended beyond the LSP building sessions and discuss why that is important. I will then highlight the main benefits and limitations of the method, and discuss its potential for more mainstream use in management education within higher education.

Student reflections were a valuable source of information and evaluation of the LSP method. There were many positive outcomes which are in line with the extant literature: student engagement and inclusion (Edwards-Waller, 2020; McCusker, 2020), facilitation of teamwork (Martin-Cruz et al., 2022; Peabody & Turesky, 2018), improving the learning experience and communication in culturally diverse groups (McCusker, 2020), enabling creativity and utilising students' unique contextual knowledge and experience (Dann, 2018; James, 2015; Jensen et al., 2018; Kurkovsky, 2015; Peabody & Noyes, 2017), and lightening the atmosphere in the classroom (Edwards-Waller, 2020). Interestingly, however, the musical element was not mentioned at all. This could be due to it not directly impacting on student learning. Another possible explanation could be that students did not consider it important or particularly significant; however, it is notable that they displayed positive reaction to the music during the workshops. Importantly, however, no negative comments pertaining to music were mentioned which indicates that, as a minimum, students did not consider the music inappropriate or disturbing.

However, despite all the benefits, there were several criticisms too—the perceived weak link to theory, and the number of LSP workshops. The link between theory and the LSP outcomes is established during the stage of reflecting on the LEGO® builds and needs to be strongly supported by the facilitator. Since the students were mostly from non-management backgrounds, it is likely that the role of the facilitator needed to be stronger than if LSP was used with students familiar with the subject. Unfortunately, there is not enough research on the role of the facilitator in linking LSP outcomes to theory; however, upon reflection, I will have a greater input in the reflection stage in my future LSP workshops, particularly with students unfamiliar with the subject.

The second limiting experience for some students was the number of LSP workshops. Whilst I strived for a balance between the delivery methods on my module, it seems that there could have been fewer sessions. The advantage of the "short-fat" style module delivery is that more time is available in each session, but with the delivery taking place every day, students can become overwhelmed, and LSP may no longer present an exciting way of learning but may be the "same old thing" instead. This might be different on modules stretching over the whole semester when students get a longer break between sessions. There may not be an ideal number of LSP sessions per module; however, it is worth noting that, despite some students feeling that there were too many LSP workshops, the LSP method was at the top of the list of what students liked the most about the management module in the student feedback.

Student feedback on the LSP experience is invaluable; however, my perspective as the lecturer-facilitator is also essential. Perhaps the most challenging step in including LEGO in my delivery was

the actual decision to do so. This may be surprising, but like most LSP participants at first, it seemed like a great, fun activity, but I was unsure how the method would enhance management learning. I felt sceptical despite reading the LSP literature and experiencing several teambuilding LSP workshops, which greatly benefited all participants. The decision to use LEGO on the management module was made easier since it was delivered within the summer school (LISS, 2022). LISS modules do need to adhere to the University of Leeds academic standards, and it is important that they are of high quality and meet the learning objectives; however, the stakes are slightly lower than on modules which are part of the curriculum for full-time courses. This is largely due to the full-time courses' direct connection to module evaluation, accreditation requirements, and student evaluation, such as the National Student Survey (NSS, 2022). However, after my experience of the LSP method, I am convinced that these concerns were ungrounded.

Two concerns were prevalent—the assurance of learning, and student satisfaction. The latter did not reflect the reality at all. Students not only enjoyed the LSP workshops, but the vast majority of them highlighted LEGO as the best part of the management module in which they learned the most. The feedback highlighted that, due to the connection between the LEGO challenges and theory, LSP helped them visualise the theory and remember it more easily. This was particularly beneficial in the group of multidisciplinary learners, which aligns with Kurkovsky (2015) and Jensen et al. (2018). Additionally, there was unanimous agreement that LSP helped speed up team cohesion and enabled groups to work more efficiently. Indeed, the resulting assignment presentations were of a much higher quality than in classes delivered more traditionally. This is not to say that everyone was keen on the method; one student did not enjoy the LEGO sessions and said they would prefer a more traditional discussion. Interestingly, however, this student was one of the few people who was the loudest in group discussions, and LEGO may have presented a devaluation of their powerful presence—due to LSP's own egalitarian nature (Cohen & Lotan, 2014). The remaining 21 students, however, despite their initial scepticism, improved their learning management theory via LSP and also developed important skills targeted by LSP.

Student satisfaction with LSP is a powerful argument in favour of the method; however, the experience is significantly dependent on the facilitator. The facilitator is responsible for the success of LSP by keeping sight of learning objectives, continually honouring the LSP ethos, and promoting LEGO as a valid learning tool. Whilst the skills that LSP enhances are developed automatically, the theoretical learning needs to be facilitated by the lecturer. There are numerous ways, but I specifically want to highlight the relevance of retrieval practice (Bjork, 1988; Moreira et al., 2019). Retrieval practice helps students learn by repeatedly recalling information. As an experiential hands-on method, LSP helps put previously taught theory into practice. Additionally, sharing and reflecting helps confirm what has been previously built. Moreover, the lecturer-facilitator can extend the value of LSP beyond the workshop. This can be done simply by referring to the builds during lectures—either by referring to some of the metaphors or by including photos of the LEGO builds in lecture slides. This reminds students and helps them make connections to topics covered earlier in the module. Similarly, including photos in the assignment group presentation gave the LSP workshops a sense of continuation as opposed to it being "just" an isolated fun activity.

These examples of increasing the effectiveness of LEGO are not exhaustive. The aim, however, is not to provide a complete list but to emphasise that unless LSP is used seriously by educators, it will most likely be merely a fun addition to module delivery, similar to its use in sessions with lighter content, such as inductions or academic and professional skills sessions (Edwards-Waller, 2020; Kight & Henderson, 2021; Martin-Cruz et al., 2022; Peabody & Turesky, 2018). Adding LEGO to lighten up theoretical content will still deliver some of the benefits of LSP, such as the development of presentational, communication, and teamworking skills, much like the students on my management module did, but its value in the acquisition of an understanding of theory will most likely remain minimal. Based on my experience, this presents one of the main challenges when adding the LSP method into module delivery. However, it does not lower the value of LEGO and the potential of LSP for learning.

The potential of LSP for management learning is indisputable. The fact that many successful companies use it to address serious business problems only highlights its relevance (Rillo, 2016). The use of the method is relatively easy, but it requires the readiness of the facilitator to make connections between the outcomes of the LEGO sessions and theory. There is a possibility that, due to its inductive nature, the LSP method might be easier to facilitate for educators with a developed qualitative mindset. Similarly, it may be more relevant to the less positivist modules on management courses. On the other hand, it could help "humanise" subjects with a more positivist tradition, such as economics, finance, or accounting, but also management and leadership (Petriglieri & Petriglieri, 2015).

However, despite all the benefits, there are some challenges. These are not so much educational but of a more practical nature. First, the LSP method is a significantly different teaching method, which could present obstacles to meeting quality standards for higher education, including those set by accrediting bodies. Second, the costs of LEGO kits are quite high; however, it is possible to use random sets of bricks, which lowers the cost. Third, the logistics of moving LEGO bricks between classrooms and campuses may be challenging. The sets of LEGO bricks can be quite heavy, and therefore the support of the timetabling team is necessary, which can be difficult at universities that struggle with room capacities. Last, the method is a hands-on experience, and as such may not always be feasible. For instance, it was not possible to use LEGO with certain COVID-19 restrictions in place, particularly that of social distancing. It is also possible that, for the same reason, some students might feel uncomfortable using LEGO bricks in the future. Students can be instructed to use hand sanitisers before and after building with LEGO; however, this only partially solves the problem.

The examples highlighted above are some of the main considerations when making decisions about the implementation of the LSP method in delivering management modules in higher education. Overall, my experience, as well as that of many of those who used LEGO in their teaching (e.g. Dann, 2018; Gkogkidis & Dacre, 2020; James, 2013; McCusker, 2014; Peabody & Noyes, 2017), is that the benefits of LSP significantly exceed its challenges.

8. Conclusion

The main aim of this paper was to increase the awareness and highlight the potential of the LSP method amongst educators at business schools, particularly in the area of management, by designing and evaluating an LSP-centred management module. This paper introduced the theoretical and practical principles of the LSP method and highlighted its relevance to management education. It also offered detailed insight into the practicalities of implementing the method in an undergraduate management module—to enhance learning and assist with the development of a group assignment. Reflections from students and the facilitator-lecturer, which highlighted the benefits but also the challenges that may accompany the LSP method, were also included. The workshops outlined above were delivered as part of the LISS programme, which is a slightly different environment than that of standard full-time modules. If the method is to be used during a standard academic year, it will need to be tailored to suit the module content, structure, and timetabling. There may also be concerns that the method may work well on a summer school module, but some might be sceptical about its use in a classroom and have concerns that students may see it as too basic for university education, thus reflecting the initial feelings of most LSP participants.

The benefits and potential of the LSP method in management education are not to be discounted on the grounds of LEGO bricks traditionally being for children. It is exactly this familiarity with LEGO that removes barriers between most participants, and allows for making learning fun and giving participants a sense of ownership of their learning. Similarly, with LEGO bringing back childhood memories when many played without worrying whether what they were building was correct or what others might have thought of their models, students build important skills and relationships more easily. As one of my students said during reflection on the LSP sessions, it

brings out the "inner child" in us. It appears that not only does time pass faster when we enjoy ourselves, but we also learn better. Therefore, a future where LSP is no longer just a great idea and is instead a very innovative method of learning, but where it materialises in module curricula on management courses and beyond, could improve student engagement and satisfaction, and produce graduates with better employability skills.

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