

All to play for: LEGO® SERIOUS PLAY® and its impact on team cohesion, collaboration and psychological safety in organisational settings using a coaching approach

Team
Coaching
using LEGO
Serious Play

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Stephanie Wheeler and Jonathan Passmore
*Henley Centre for Coaching, Henley Business School,
University of Reading, Reading, UK, and*
Richard Gold
Independent Researcher, London, UK

Abstract

Purpose – Collaboration and psychological safety are key factors to effective teams. LEGO® SERIOUS PLAY® (LSP) has emerged over the past decade as a development tool used in both educational and workplace settings for a range of purposes. In this study, the authors sought to investigate the impact of the experience of participating in a LSP away-day on the collaboration and psychological safety of the participants.

Design/methodology/approach – In this study the subjective experience of participants of LSP workshop awaydays using a coaching approach were examined through interpretative phenomenological analysis. Members of two teams were invited to participate in team awaydays and approximately six weeks later, they were invited to share their reflections on the experience and its impact on team relationships and team performance.

Findings – The interviews revealed that participants' felt experience of engaging with LSP was positive, created closer bonds within the team and a better understanding of each other and the challenges which the team were facing. Participants reported a tangible change in the way they are collaborating and engaging not only just with fellow participants but also with other colleagues.

Originality/value – The experience of the participants in this study supports the view that LSP can have a positive role to play in developing psychological safety and collaboration in organisational teams and that there was a lasting impact on group norms which was sustained after the event.

Keywords Team learning, Team cohesion, Collaboration, Psychological safety, LEGO® SERIOUS PLAY® (LSP), Positive psychology, Coaching, RCT, IPA

Paper type Research paper

Introduction

Collaborative work within organisations has increased dramatically over the last 20 years as noted by [Cross et al.'s \(2016\)](#) longitudinal analysis across more than 300 organisations. They

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concluded that as business becomes increasingly global and cross-functional, silos are breaking down, connectivity is increasing and teamwork is seen as a key to organisational success. The question how best to support the development of team effectiveness has become a topic for organisations and their stakeholders.

Team cohesion

Teams are characterized by members working interdependently towards collective goals and by a period of stable membership (Hackman, 2002). The interdependence amongst its members is one of the defining characteristics of a team (Wageman, 2001), and as interdependence increases, so does the need for team interaction and coordination (Hu and Liden, 2011). In their study of 55 large teams, Gratton and Erickson (2007) identified eight ways to build collaborative teams. Amongst these, the importance of relationship building was prominent and the need for trust in successful collaboration was taken as a given. The concept of trust stands distinct from psychological safety (Edmondson, 2002a) in terms of timeframe, the object of focus and level of analysis, in particular it focusses on how one person views another. Nevertheless, it has much in common with psychological safety which focusses on how group members perceive a group norm (Newman *et al.*, 2017).

Psychological safety

Edmondson's (2002b) research into team learning and development concluded that psychological safety is a critical factor (also previously identified by Schein and Bennis, 1965 as critical for organisational learning and change). Edmondson (1999) concluded that in the context of a given team's norms, individuals engage in a tacit calculus at micro-behavioural decision points, in which they assess interpersonal risk associated with a given behaviour. The majority of subsequent studies have adopted Edmondson's (1999) definition of psychological safety, namely that it is a shared belief amongst individuals as to whether it is safe to engage in interpersonal risk-taking in the workplace (Edmondson *et al.*, 2007; Edmondson and Lei, 2014; Newman *et al.*, 2017).

Edmondson's (1999) findings were supported by a longitudinal study at Google which identified psychological safety as the most important element for effective teams (Bergmann and Schaeppi, 2016).

Collaboration and psychological safety are therefore key factors to effective teams. In this study, the authors sought to investigate the impact of the experience of participating in a LEGO® Serious Play® (LSP) awayday on the collaboration and psychological safety of the participants.

LSP and game play theory

The study of play has been taken seriously by scholars for nearly a century and much research evidencing the many and varied benefits of play exists (Gordon, 2014). In general, play is a cognitive, emotional, sensory and social experience (Bogers and Sproedt, 2012). Its role in organisations is becoming increasingly important (Mainemelis and Altman, 2010; Sørensen and Spoelstra, 2012) with the recognition that cognitive, emotional and social dimensions of learning are addressed by play (Bogers and Sproedt, 2012).

Roos *et al.* (2004, p. 15) define serious play as activity that "draws on the imagination, integrates cognitive, social and emotional dimensions of experience and intentionally brings the emergent benefits of play to bear on organizational challenges". Serious play invites participants to "think with the hands through creating a model" (Roos and Victor, 1999). The assumption underlying serious play is based on Polanyi's (1969) tacit integration, namely that the participants hold the ideas and answers to challenging questions without being

aware of them. The answers emerge through acting, for example modelling, and developers of the method argue serious play has a high creative potential through its intuitive playful character (Schulz *et al.*, 2015).

The LSP method was developed in the mid-1990s by Johan Roos and Bart Victor (Roos and Victor, 2018). It is a facilitated meeting, communication and problem-solving process in which participants are led through a series of open questions, probing increasingly deeper into the subject (LEGO®, 2019). Each participant builds their own 3D LEGO® model in response to the facilitator's questions using specially selected LEGO® pieces. Participants build metaphorical models representing their ideas or experience (McCusker, 2014) with the models serving as the basis for group discussion, knowledge sharing, problem-solving and decision-making, as opposed to responding with words as in a traditional coaching conversation. The combination of modelling which represent personal stories, in response to socratic questions, relativizes the quality of the model designed, and therefore levels out the modelling skills of experienced and inexperienced participants (Schulz, 2015).

LSP applies flow (Csikszentmihalyi, 1990), positive emotions and constructs of positive psychology to assist participants to gain insight (Harn and Hsiao, 2018) using LEGO® bricks to support storytelling and metaphors to explore the intrinsic meanings that participants are attempting to convey (Bab and Boniwell, 2017; Harn and Hsiao, 2018). Through the loss of self-consciousness and immersion in the process enabled by flow, LSP seeks to elicit authentic opinions, ideas and identities for consideration and reflection within the participating group (McCusker, 2019). Perspective-taking, the ability to perceive an act or situation from someone else's point of view, is inherent in the design of LSP and works to reduce implicit bias and make invisible mindsets visible (Dijks *et al.*, 2018).

One lens through which the effect of LSP may be considered is the physiological impact of positive emotions as well as the effect of play on the brain. Anxiety increases threat perception (Kouchaki and Desai, 2015) and if our conscious or even unconscious mind notices a need for a defence or to provide energy, the sympathetic nervous system (SNS) is activated which prepares our body for an emergency (Pohjjavaara *et al.*, 2003). Kouchaki and Desai (2015) found that threat perception increased by anxiety results in self-interested and potentially unethical behaviour. Furthermore, stressful experiences can influence decision-making in complex ways not addressed by the flight-or-flight model (Cannon, 1915) with recent advances suggesting that stress exposure influences basic neural circuits involved in reward processing and learning, while also biasing decisions towards habit and modulating our propensity to engage in risk-taking (Porcelli and Delgado, 2017).

In contrast, Fredrickson's (2004) broaden-and-build theory of positive emotions of individuals' states that during the broadening process, positive emotions: "Create the urge to play, push the limits and be creative, urges evident not only in social and physical behaviour, but also in intellectual and artistic behaviour" (Fredrickson, 2004, p. 1369).

Panksepp (1998, 2009; Panksepp and Biven, 2012), neuroscientist and psychobiologist, identified brain circuitry dedicated to play that lies deep in the instinctual action apparatus of the mammalian brain (Panksepp, 2009, p. 16). This play neural circuitry is one of seven interwoven and interactive emotional systems (or motivational/affective systems) which are all relevant to relationships. Experiencing playfulness, mindfulness, compassion and hope activates the body's parasympathetic nervous system (PNS) (Zhou *et al.*, 2019). Once activated, the PNS allows a person to be more open to new ideas, emotions and people and consider possibilities for the future and acts as an antidote to the arousal of SNS (Boyatzis *et al.*, 2013).

The role of positive emotions in relation to the nervous system is addressed by Porges' (2011) polyvagal definition of play: play blends the social engagement system (neuroception of safety) and the SNS (mobilizing in the absence of danger). During play, the social

engagement system may be engaged allowing ventures into the sympathetic branch (in the absence of danger) to explore and play out different scenarios (Kestly, 2016).

In groups, positive emotions strengthen an affiliation function (van der Schalk *et al.*, 2011), broadening interactions amongst group members through developing others' ideas and encouraging communication (Rhee, 2007). These group momentary thought-action repertoires build enduring group social resources, such as a sense of membership, social support and bonds, a feeling of closeness and friendship (Rhee, 2007; Spoor and Kelly, 2004).

The impact of play may last long after the experience. Speer *et al.* (2014) suggest that recalling positive autobiographical memories is intrinsically valuable, increasing one's positive emotion and engaging reward-related neural circuitry. Fredrickson's (1998, 2001) broaden-and-build theory holds that positive emotions increase social resources such as social support and connections amongst people and was expanded to small group level by Peñalver *et al.* (2019).

Methods

Research question

The researchers were seeking to explore the experience of using LSP experience in a team development setting. Specifically, how engagement in an otherwise typical team away day lead to sustained changes in team members views about team relationships, roles and membership, through the concepts of psychological safety, cohesion and collaboration.

Design

The study uses interpretative phenomenological analysis (IPA) as the methodological approach. IPA aims to explore how participants make sense of their personal and social world (Smith and Osborn, 2015) and is concerned with understanding experiences of the person in context', it prioritises participants' experiences and their interpretations of them (Braun and Clarke, 2013). This approach is more concerned with the "whatness" than the "whyness" (Nelson and Rawlings, 2007) and as a qualitative method, is flexible allowing the discovery of uncommon or novel themes and new insights (Holliday, 2002).

Method

The research team members are a group of researchers based at a UK university primarily interested in personal development, with a focus on coaching, mentoring and reflective practice. The team engaged with LSP with lead to them reaching out to the LSP community for trained LSP facilitators to support a research project through delivering a series of LSP events.

The participants were drawn from a number of organisations who responded to an open advert with a professional body. The researchers had no prior relationship with the professional body. The team were selected randomly from those who meet the criteria and who responded in the two week deadline. The criteria for selection were: the team consisted of between 8 and 13 members, all team members worked in the same geographical location, all were employees of the organisation and all members in the team shared a goal or common purpose.

The team events took place at a conference centre and no prior details were released to the team, with the exception the day was designed to help "team working", and would be delivered by a professional facilitator (not the researchers). At the start of the day participants were briefed on the plan for the day which included the use of LSP, and throughout the day undertook a number of exercises, working both individually, in small groups and as a team to

build representations of themselves, team vision and challenges using LEGO®. During each build the team were invited to consider and respond to questions, sometimes describing or explaining the models which had emerged from the joint builds. The interventions employed a coaching style, with the aim of encouraging self-discovery and sense making by participants and based on the LSP approach and the Association of Master Trainers certified methodology.

Six weeks after the event a sample of six team members from the two teams were invited to participate to talk about their experiences during the day. Three males and three females participated in the study, age was not considered as a factor. Participants were interviewed in semi-structured interviews in private meeting rooms in their office. All participants were asked the same core questions which was designed to last no longer than 30 min, reflecting the researchers' agreement with the organisation. Some participants elaborating freely on their answers; the longest interview lasted 26 min and the shortest 12 min (with the average length 17 min). The interviews were recorded and subsequently transcribed. Each participant was assigned one of the first six letters of the alphabet.

Limitations of this research

This study has a number of limitations. Firstly, the personal frame of reference of the researchers inevitably influences the analysis in IPA (Golsworthy and Coyle, 2001); had the analysis had been carried out by different researchers, it may have yielded different results. Secondly, IPA focusses on the lived experience of a small number of participants (Tuffour, 2017) and as such, there are limits as to the generalisability of this study. Thirdly, this study examined the participants' individual experiences of LSP and did not address the wider implications for group norms when returning to the workplace. As psychological safety is likely to be more potent and meaningful at the team rather than organisational level (Newman *et al.*, 2017), there are ethical implications for conducting LSP studies with some but not all team members; some of the participants described how difficult it was to convey the nuances of the experience to team members who had not participated in the study and the impact of this on the wider group dynamics.

The LSP away-day

Analysis. The analysis of the data was carried out using the heuristic framework for analysis set out in Smith *et al.* (2009) applying an iterative and inductive cycle (Smith, 2007). The following steps were taken for each of the six participants' contributions.

Initially, the researchers immersed themselves in the original data, reading and re-reading the transcripts and listening again to the recordings in order to actively engage with the data and begin the process of entering the participant's world (Smith *et al.*, 2009, p. 82). The next step consisted of initial noting of descriptive, linguistic and conceptual comments, examining the semantic content and language used by the participants on a very exploratory level. The third step involved an analytical shift to the analysts' notes, developing emergent themes reflecting the participants' original words and thoughts and the analysts' interpretation. Having developed a set of chronological themes within the transcript, the analysts mapped how they thought these themes fit together and where it was felt appropriate, abandoning emergent themes depending on their perceived relevance to the research question and scope of this study. Finally, when these steps were completed for each of the six participants, the analysts looked for patterns across the interviews, identifying themes and super-ordinated themes across the group, creating a master table of themes for the group setting out the themes and illustrating each with extracts from the transcripts of each participant where relevant.

Results

The analysis identified a number of strong recurrent themes. For the purposes of this paper, the authors concentrate on those themes which relate directly to team cohesion and safety, namely, positive emotions, thinking differently, communicating differently, collaboration and subsequent impact.

Positivity in learning: "I enjoyed it, I really enjoyed it"

All had prior experience of work based away-days either with their current or previous employer and half, like F, stated that they did not expect the awayday to have any lasting impact:

You know, I've done a few team away days or these development days where everybody's like, yeah, good, and back to work, you know, and it's almost like that was a bit of a, I'm really busy, that's a bit of a waste of my time right now. (F)

There is a jadedness with team away-days which are perceived as being seen collectively as homogenous, as E observed, "these sort of things are kind of a bit stale", showing a lack of anticipation of engagement either by self or other participants, as B reflects, "it's always, it feels like you're in school and you're doing your job just in a massive ideation session". There is a suggestion of disengagement before the session has started and a lack of expectation of what will be experienced or changed as a result, leaving little room for potential to change the team's current level of cohesion or psychological safety through participation.

The participants were unaware that they were going to be spending the awayday engaging in LSP and for some, initially seeing the LEGO® on their tables had an immediate effect on their emotions:

When I came in and I saw the LEGO®, I felt really, I felt quite excited and quite enthusiastic about it, because everybody in any meeting that you normally have, you know, within the teams, it's so easy to be distracted by other things, but with LEGO®, it was just, it was like, as a bunch of friends playing with LEGO® but getting something out of it really. (B)

For B, who's initial scepticism is noted above, merely the anticipation of using the LEGO® aroused excitement and enthusiasm. Her view of her colleagues is transformed to a "bunch of friends" which suggests a shift in mood, energy and engagement and the ability to focus without distractions during the activity. There is the link with LEGO® to childhood: "yes, because obviously I had quite a humorous feel towards it when I arrived, you know, it's strongly associated with childhood" (C). For this participant, the presence of LEGO® seems to elicit positive memories of play in childhood and there is an assumption by this participant that this holds for the other participants.

The theme of positive emotions both during the LSP workshop and when recalling memories of the event was strongly evident across most of the participants:

So, I came away feeling positive with it and I also picked up on the vibe it was a very positive session for the rest of my team. So, there's nothing to not like about, you know, going off on the vibe of positivity in the team, and it's helped. (E)

Not only were positive emotions experienced individually, participation provided a collective positive or "warm" (E) memory.

Of the two exceptions, A thought that the experience was "exceptionally good" and "exceptionally stimulating" and spoke of the effect on his thinking rather than emotions. While F thought the event "really useful", she noted:

I wish that I could have let my mind go more in the sense, I didn't, like, I found that quite stressful because I'm not a particularly creative person. So, I know that's my own, I know they're my own kind

of mind barriers on that, but I was like, well this thing that I've drawn or made with my hands doesn't really explain. I'm a much more word space person. . . (F)

Her experiences seems to be that her internal judgement of her creative abilities caused stress rather than positive emotions, however, she acknowledged the impact on her ability to have difficult conversations with the use of LEGO® as it "slightly lightens the mood and you're like, well, everyone's doing these things and there is that childlike, helps to, for me, it just helps the constant like awkwardness in that sense".

The positive emotions evoked through the presence and play with LEGO® and the interactions and thinking which this facilitated (see more below) should not be confused with a denial of difficulties faced by the team which evoked negative emotions:

I think there was a, there were definitely lulls, you know, there were peaks and troughs in the day, moments where you thought oh, that's a really positive thing, and then there were definitely moments where you thought that's not very good is it, that's quite a barrier that we need to work to overcome, and ultimately, I think it did feel kind of positive by the end. (F)

One of the means by which participants continued to carry on evoking positive emotions in the six weeks after the workshop, was by "celebrating success obviously which stuck out as one of the main things" including celebrating past successes (D). This benefits not only the immediate team which attended the workshop but also the wider department "because people are involved in those projects, those deliverables, so it's quite nice to put that out there" (D).

Thinking differently: "to help to sort of bypass some of those mental traps"

The majority of the participants spoke about the use of LEGO® effecting their brain and thinking process, effectively giving them "a different way of thinking" (A). The experiences suggest that there were two main contributors to achieving this. Firstly, the concentration invited by LEGO®:

I think for me, it's because you, although we were all in the room and we were all talking, but when you're concentrating on something and you, like, I'm trying to build this thing to describe this situation, you then are a bit more focused and I think you kind of filter out all the noise in your head and you just completely focus on that. . . . Your concentration is just now about what you're thinking about. I think that's the only way I can explain. (C)

And:

The method was useful in it and for me, it kept me engaged. As I say, for somebody with a butterfly mind, you know, the day flew by and you know, was really good. (E)

There is a suggestion of timelessness and pure concentration, both components of flow (Csikszentmihalyi, 1990). The sense of engagement and focus is in stark contrast to some of the initial expectations described above.

Secondly, the use of LEGO® was perceived as reducing anxiety and enabling recognition of emotions of communication of these to team members:

I think for me, personally, it made me feel, I'm not really good with stuff like that, but it made me concentrate in a calmer way. It made me think about my thoughts in a more, less anxious, less stressy way, oh, I'm going through this, but I was enjoying visualising my emotions, if that makes any sense. It helped you take yourself out of your body and look at yourself as this object and say this is me. You feel less anxious. You feel like whatever is stressing you out is happening to you. . . .you're a bit removed from it. (B)

The extract above illustrates that the effect of the concentration described above appears to be a sense of calm and enjoyment of contemplating and reflection on emotions. The move from anxiety to enjoyment is striking, suggesting both an increase in positive emotions and an

acceptance of the presence of experienced emotions. By using the LEGO® figures to represent emotions and thoughts, a sense of detachment and acceptance appears to be created which seems critical in using LSP to help participants to achieve clarity on their own emotions and thoughts, putting them in a better position to communicate with their team members:

To prevent our heads getting in the way as it were between what we thought we knew about how we might be feeling about our roles or about obstacles in the organisation and being able to actually get past that so we could actually express it. So, having something physical to help to sort of bypass some of those mental traps that inhibit those conversations, even with oneself, I think. (C)

This represents a strong theme, namely that the use of LEGO® “shutting down that part of the brain” which second-guesses and predicts implications of “everything that you say” (C), allowing identification and acceptance by the participants of their emotions and thoughts and facilitating expression of those feelings to others.

Communicating differently: “I didn’t think that they had those sorts of thoughts”

Four sub-themes identified are: everyone is involved, parity of participants, empathy/connection and safety.

Everyone involved. As we saw above, one of the effects of LSP was engagement and a number of the participants emphasised that everyone in the group was involved “I think everyone that was there was also really engaged” (A), resulting in creating an environment receptive to safety and collaboration: “So, I think it kind of, again, it’s just like, brought the team together really well” (D). By the end of the session, the effect was:

It was like, here’s our end goal, which everyone agreed on, and here’s all our bits in between, and basically, everyone agreed on that story and where the various people were and where the various issues were and everyone agreed there were some issues here that could be overcome. (F)

The emphasis on whole group agreement on both the end goal and the journey from the starting point is striking. As C observed, “this sort of exercise in terms of generating more openness and energy in teams to be more resilient and to work for change has, is something that’s intimately aligned with inclusion as a resource”. The sense of full engagement and contribution and listening seemed a common occurrence.

Parity. Linked to the involvement of all participants is the lack of hierarchy noted by the participants. The presence and participation of members of the management team were seen as vital:

It’s not very often you’ll see a director playing around with LEGO®. . . . [he] was quite relaxed on that day, he was quite free and quite open in himself. You could see he kind of took that hat off, you know, for the day and he was like, no, I’m here with you, you know, we’re at the same level today. There was no hierarchical structure about it. So, I think everybody felt quite open to be frank. (B)

Thinking again of the image of “a bunch of friends playing with LEGO®” (B), there is a sense of ease, equality, freedom to be oneself and with that comes the safety to challenge and be frank, both words used by participants (A, B) and to have “awkward” conversations which needed to be had (F).

Empathy/connection. Participating in LSP brought a greater sense of empathy and/or connection with other participants. Partly as it provided an opportunity of:

Speaking to them on a personal level on something we wouldn’t normally talk about. So, that really helped with connecting to different people, especially with people you don’t work often enough with. So, I think that was really helpful for me. (D)

The sense of a lack of opportunity to speak to co-workers on a personal level rather than work issues because of heavy work demands, lack of time and remote working seemed prevalent.

LSP creates a “safety net for people to talk to each other and you get a lot further in an odd way with your understanding of your co-workers and of your own feelings” (C) including discovering “drivers, motivations, do they have a shared purpose, that kind of stuff, you know, teasing stuff out of how we work” (E).

Understanding their own feelings seemed an important part of the LSP, and in part, explicitly or implicitly, this appeared to enable participants to overcoming judgement of others:

[I’m] slightly cross with myself on reflection for probably judging them before I knew them, I think, wow, and that was really interesting to me thinking some of the things that, and not just the things that they made but some of the things they said, I thought, I didn’t, you know, I’m biased, didn’t think that they had those sorts of thoughts perhaps, and they really surprised me, and that was a real positive, in terms of, you know, on a sort of micro level getting to know people. (F)

There was an emphasis on the power of the positive shared experience by a number of participants, giving them “commonality of language and bonding” (D). This common language, “a more novel language than the usual sort of formalised sort of management speak that I think it did bring that, closer together as a unit” (E).

Safety. The ease and focus referred to above, seemed to support safety with the group:

I mean, it’s hard to be agitated or to be distracted or to be unfocused when there’s something so specific to put your mind to. There’s an ease and a restfulness about that, that really unlocks a lot of anxiety around what you might want to say or express. So, that’s welcome and I think unusual in ones working life where you’re always second guessing, you’re always trying to anticipate the implications of everything you say or do. (C)

Working life, for C, appears to hold considerable anxiety in “second-guessing” the potential impact of actions and conversations. It seems that the result is agitation, distraction and lack of focus which is likely to increase threat perception. In contrast, LSP facilitated an ease and restfulness which lends a different quality to the type of conversations which C felt comfortable to have.

Seeing other participants saying “something really awkward” acts as permission because “others are doing it” (F). The role of the LEGO® is seen by E to “slightly lighten[s] the mood and you’re like, well, everyone’s doing these things and there is that childlike, helps to, for me, it just helps the constant like awkwardness in that sense” (E). The emotions generated by the participation with the the LEGO® tasks appears to “create a safety net for people to talk to each other” (C). Perhaps this links back to the sense of being part of a “bunch of friends playing with LEGO®” (B).

The effect of the safety created by LPS appears to be the key reason why the participants thought that the experience was so effective. B went so far as to say that the modelling at the start of the day of:

What we were going through and what we felt within our roles, I think that had a massive impact because people were so vulnerable in that sense that they were open and they’d shared, you know, what was going on. (B)

B’s subsequent reflections support that LSP had a lasting impact on behaviour.

The experience of participants being “so vulnerable” encouraged others to “be are a lot more open about how they felt, it allowed people to express how they felt about how they felt” (B). Strikingly, C noted that “I think on that day, I didn’t feel like there was anything I couldn’t say”, going on to note “that whole journey that starts from people feeling safe in acknowledging, you know, what’s going on with them first in order to feel safe working with others” (C).

Perhaps it is the experience of “awkward” conversations with vulnerability being conducted in a safe environment where they are listened to and incorporated into the understanding of the group is what contributes to the lasting effect of participation in LSP. As F noted:

Awkward conversations can and have to happen and they did happen and it’s okay and positive things and change can come out of that. We’re all British, aren’t we? Well, we’re not all British, but a lot of us are and it’s awkward, you know. I go red when awkward conversations happen. (F)

This extract describes a physical reaction to “awkward conversations”, perhaps implying physical discomfort not dissimilar to the anxiety described by C above. The implied lack of perceived safety inhibiting conversations, thereby not addressing issues which need addressing, perhaps proving an obstacle to collaboration. The experience of the LSP with work colleagues has shown F that it is not only possible but also necessary for such conversations to take place and such conversations may lead to positive outcomes and change.

Collaboration: “the most observable benefit”

All of the participants thought that participating in the LSP was beneficial. The effect of the arousal of positive emotions, thinking and communicating differently changed how participants perceived and behaved towards each other. Some spoke of the day in terms of a journey, with participants and the collective developing throughout the day. Asked whether the day affected how participants felt about each other, A replied:

Oh, I think it did, because we grew, this is my own opinion, that we grew throughout the day and we grew through the experience and it was a shared experience that we all had together, and everyone was engaged with the process. (A)

Again, we have the sense of the importance that everyone was actively engaged and participated in the activities and that this was a shared experience which participants would take away with them. Taken with the other interviews, it appears that participants felt that not only did they grow individually (in terms of recognising some of their own barriers and pre-conceptions and overcoming them but also seeing other participants in a different light and increasing their empathy and connection towards them), but there was also a collective impact which changed how the group functioned. E described it as “team building, not in the sort of traditional sense, team brain building I think probably call it in that respect, bringing us closer together that way, so, yes”.

The impact of LSP enabling a systemic view is a common theme in the interviews, for example:

So, the tail end of it, which is a very shared activity, where you’re all bringing your pieces together and looking at where they, you know, in terms of literally mapping their connection to one another, making people see how connected it is, but also looking at where the blocks are, where the path of least resistance is when you’re looking at the whole pattern of all the pieces. . . . being done collectively, that part of the day is I think where the most observable benefit has stemmed from because it’s that, I think that’s what people have, I’ve hung on to that the most. (C)

The extract illustrates the collective experience of physically seeing connections between team members and the wider organisation in the context where each individual feels safe and heard. C’s reflection that she has “hung onto that the most” suggests a significantly memorable experience in how she viewed her position with her team and the organisation and how other participants and the group collectively did so too. There is a sense that these experiences can be fleeting once participants return to work, however, it appears that the experience has become a reference point to which C feels she can return.

Lasting impact: “We feel the change”

C is not alone in reporting that the effects of the LSP awayday had a lasting impact. Overall, the participants reported a greater sense of connection to each other and the appreciation of a common goal, resulting in changed behaviour. As D notes, “we do kind of go through and say actually, what have you got on and how can we help and stuff like that” and B:

So, we feel the difference. We feel the change and we’re a lot more empathetic to each other. Not that we were not before, but we all check in a bit more now to see how the workload is going. (B)

There is a sense of a tangible “shift” (F) in how people behave towards each other with perceived safety in suggesting and asking for greater collaboration, supported by a change in the group norm:

I felt like that away day has made that more of a given, so that if it’s already your natural working style, it’s actually a bit easier to proceed with. It’s a little bit more in the fabric of things now. (C)

The psychological safety amongst the participants seemed to be the base from which greater collaboration was enabled, creating greater connection and shared vision:

I think it’s that, in a more novel way, it’s given us that connection, the personalities, the language, the idea of that vision and those terms, you know, the opportunity that comes out which you can visualise it as the gold amongst all the rubbish and stuff. So, having that common language, I think, comes from it. (E)

In summary, when interviewed six weeks after the LSP workshop, participants have noticed a tangible change in the way they are collaborating and engaging not only just with fellow participants but also with other colleagues. This is consistent with the positive memories participants have of the day, the reported “shared experience” (A), the insights gained into self and others and the “common language” (E) developed during the experience.

Discussion

This study has revealed that participants’ felt experience of engaging with LSP contributed to perceptions of enhanced collaborative working and a greater sense of psychological safety. These sensations were facilitated by positive emotion and affective experience (Kristiansen and Rasmussen, 2014), balancing out the negativity bias (Rozin and Royzman, 2001), being mindfully present and overriding the distraction reflex (Langer, 1989), flow (Csikszentmihalyi, 1990) and prospection (Seligman *et al.*, 2013).

When psychological safety is present, group members expressed the view that they felt safer to be themselves, were less fearful of rejection for being themselves and felt more willing to expressing their views. They were more likely to respect each other’s competences, more interested in each other as people, and felt willing to show positive intentions towards others (Edmondson, 1999; Newman *et al.*, 2017).

It appears that the mere presence of the LEGO® was sufficient for the arousal of positive emotions in the participants, ranging from excitement and enthusiasm to curiosity which elicited an engagement in the process beyond the level which participants had experienced in prior away-days. Coupled with this, the manner in which participants appear to perceive each other changed to the positively connotated “a bunch of friends playing with LEGO®” (B). One of the hallmarks of psychological safety is group members speaking to each other as “human to human”, eliciting trust and promoting positive language and behaviours (Edmondson, 2019). This is precisely the terminology used by B when reflecting on the lasting effect of participating in LSP: “*Td say it feels like people are more human with one another.*”

LSP appeared in this study to encourage any potential conflict or problems to be approached as collaborators, not adversaries; another hall-mark of psychological safety

(Edmondson, 2019). This would suggest that the PNS of participants was engaged through the serious play activities, which activated their social engagement systems (Porges, 2011) and allowed participants to be more open to emotions, people and new ideas (Boyatzis *et al.*, 2013). We hypothesise the activated PNS also reduced the participant's threat perception, allowing them to take greater interpersonal risks by making themselves "vulnerable" (B) through their contributions. From a group perspective, experiencing the positive emotions may have strengthened the affiliation function (van der Schalk *et al.*, 2011), further encouraging communication (Rhee, 2007). For clarity, we are not hypothesising in this study that neuroscience provides a basis on which LSP should be used, but offering it as a reasonable part of the explanation of its effectiveness and impact on collaboration, team cohesion and psychological safety.

The curiosity and the requisite listening process which is needed to establish psychological safety (Edmondson, 2019) is perhaps facilitated by the objectification of ideas, thoughts and emotions into 3D models and the story-telling and metaphor use in LSP. This links to findings from Schulz *et al.* (2015) who found that the use of LEGO® as opposed to other modelling materials which were self-explanatory (e.g. paper, storyboards), did not tend to simplify outcomes; the abstraction of the LEGO® models were more likely to lead to the use of metaphoric and complex solutions and facilitate discussion. We hypothesise it is this which created "a different way of thinking" (A) and "team brain building" (E). Furthermore, the LEGO® models as metaphors create a means of creating awareness of participants' own understanding (Schulz *et al.*, 2015) as well as for a reciprocal understanding of metaphorical frames (McClusker, 2019), enabling "knowing through objects", triggering meaning-making and relationship building (Lee and Amjadi, 2014). Again, these observations appear to have been borne out in this study, with participants revealing thoughts and ideas which other participants had not been aware of.

The positive emotions together with the focus and concentration reported, the sense of timelessness reported by some of the participants bring to mind flow (Csikszentmihalyi, 1990), which is associated with activity of the prefrontal cortex of the brain and may therefore be associated with functions such as cognition, emotion, maintenance of internal goals and reward processing (Yoshida *et al.*, 2014). In particular, flow appears to deactivate the dorsolateral prefrontal cortex which dampens self-monitoring and impulse control, allowing participants to be less critical of themselves and more courageous (Kopala-Sibley and Zuroff, 2019), allowing participants to have the "awkward conversations" which needed to be had (F) reported by participants.

This appears to be further supported by the participants being enabled to take a systemic view of themselves and their team; placing individually build models into the landscape created by all participants allows metaphors to be made explicit and the relationship between ideas can be seen and made solid, creating a single shared metaphor in which all participants are stakeholders (McClusker, 2019). Participants spoke of a novel, common and shared language being created by the experience. An important contributor of the success of the experience appeared to be that all participants were actively engaged and listened to and that there was parity between participants, supporting previous studies which suggest that LSP has the potential to support thinking and reflection in a non-hierarchical and participant-centred way (James, 2013; McCusker, 2019).

Furthermore, as the participants were seeing and talking about three-D representations, they are somehow distant from their creators, allowing discussion of the metaphors represented by the models to be discussed objectively (Schulz *et al.*, 2015), perhaps further reducing threat perception. It appears that LSP® created an environment which allowed a loosening of the participants' urge to control and regulate information in social interactions in a constant conscious and subconscious attempt to influence the others' perceptions of them (Goffman, 1978). An important element of this is that all of the participants were engaged and

with a sense of parity. The participants' experience bore out that the objectivity facilitated by LEGO® enables any differences in power hierarchy within the group to play only a minor role (Schulz *et al.*, 2015) and Peabody and Noyes' (2017) finding that LSP accelerates deeper thinking, improves inclusive learning and promotes group cohesion.

The experiences reported by participants appeared to enable them to recall positive memories, sometimes reflected in body language, such as smiling or laughing while talking about the story. In line with the literature, it is possible that this may have had the effect of increasing their positive emotions after the event and engaging reward-related neural circuitry (Speer *et al.*, 2014; Peñalver *et al.*, 2019), supporting the broadening effect of positive emotions (Fredrickson, 1998, 2001). However, caution needs to be exercised in this regard and further work is needed to explore this aspect.

The emphasis on whole group agreement on both the end goal and the journey from the starting point is striking. It suggests the safety to raise issues and concerns and collaboration to overcome them, together with the satisfaction of achieving consensus on both the present positions and future direction. This collective ownership appears to provide foundation for future collaboration as is borne out by the participants. It was noteworthy, as psychological safety (as opposed to trust) focusses on how group members perceive a group norm (Newman *et al.*, 2017), that six weeks after participating in LSP, the participants noticed a "tangible shift" (F) and a change in the "fabric" (C) of doing things as a result. This suggests that participation had an effect on the group norms, facilitating increased psychological safety and collaboration within teams.

Conclusion

Continuous learning and change in organisations, which fundamentally occurs at the team level (Senge, 1990), is imperative for success in a dynamic and competitive environment; to enable organisations, to flourish, employees must feel safe within the teams they work within (Edmondson, 1999; Frazier *et al.*, 2017). In a survey of employees across 24 countries, only 47% characterized their workplace as "a psychologically safe and healthy environment to work in" (Ipsos, 2012 as cited in Frazier *et al.*, 2017), pointing to the need for organisations to make establishing psychological safety a key goal.

The experience of the participants in this study supports the view that LSP can have a positive role to play in developing psychological safety and collaboration and that there was an impact on group norms which was sustained several months after the event. The results of this study reflected Dijkes (2018; Dijkes *et al.*, 2018) investigation into the effect of LSP on inspiring creative confidence which saw significant results in several areas relating to positive team dynamics and individual mindset shifts including empathy, perspective-taking and the presence of psychological safety.

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Further reading

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About the authors

Stephanie Wheeler is a coach and facilitator working primarily with executives and emerging leaders. She holds a MSc in Coaching and Behavioural Change from Henley Business School and is ICF accredited (ACC). She is certified by the Association of Master Trainers in the LEGO® SERIOUS PLAY® method. Stephanie's first career was in law, working for Clifford Chance, Pinsent Masons and Sotheby's. She has published her research paper on coaching and playfulness and is currently expanding this by writing a book with Routledge. Stephanie Wheeler is the corresponding author and can be contacted at: stephanie@stephaniewheeler.co.uk

Jonathan Passmore is professor of coaching and behavioural change at Henley Business School and the director of the Henley Centre for Coaching. He has written widely with over 100 scientific papers and book chapters and some 30 books on coaching, change and leadership. Prior to joining Henley Jonathan has worked for PWC, OPM and IBM Business Consulting. He is a chartered psychologist and accredited coach. He can be contacted at jonathancpassmore@yahoo.co.uk

Richard Gold holds an MBA from INSEAD and has 25 years' experience as a management consultant across a range of disciplines. Certified by the Association of Master Trainers in the LEGO® SERIOUS PLAY® method, he is one of the UK's most experienced LSP facilitators having delivered workshops covering diverse topics for many organisations in the private, public and third sectors. He facilitated the team development workshops that are the subject of this study. He can be contacted at richard.gold@bulbb.co.uk

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