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# **Using Lego® Bricks to Build a Growth Mindset: A Case Study.**

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### **Abstract**

This case study illustrates how building with Lego® bricks was used to help an athlete identify instances of growth mindset in his play such that this could help him overcome fix mindset thinking. The player, a member of a trophy winning hurling squad, was self-motivated and had developed a strategy of saying, “No” to avoid becoming injured due to ‘over playing’. He participated in a Lego® Serious Play® in Positive Psychology group workshop, the theme of which was the growth mindset. As a result, he was able to determine how he could work from fixed mindset triggers to more growth mindset beliefs. He was then able to transform his thinking from a stance where he felt he had to protect himself from the demands of others to realizing they can contribute to him as he developed as a player. He reported that building with Lego® bricks helped him “form new ideas in ways that you wouldn’t be able to do just through your mind”. This report demonstrates how a growth mindset workshop which incorporated Lego® Bricks can support player development after the experience adverse circumstances.

## **Introduction**

In this paper we demonstrate how Lego® bricks can be incorporated into a growth mindset intervention to help an athlete work through fixed mindset triggers. Yeager and Dweck (2020) define the growth mindset as the belief that performance improves through increased effort and learning effective strategies, while the beliefs of the fixed mindset are that ability does not improve through effort. Such competitors view defeats as evidence of their lack of ability. They become self-defensive and demotivated, often shunning challenge. However, those who believe they can always improve are more likely to view obstacles and setbacks as feedback on their performance, and thus strive to learn, develop and progress (Dweck & Molden, 2017).

Sporting failures can provide unique opportunities for athlete development (Collins & MacNamara, 2012). Indeed, experiencing and handling some adversity can be valuable for player enhancement (Sarkar & Fletcher, 2017). Second Wave Positive Psychology, the science of how to create positive outcomes in the presence of the negative (Wong, 2011), can provide a framework for this type of work. Specifically, how can the experience of failure in competitive sport bring about the possibility of improved achievement? In this paper we report on such a scenario and how we used a Lego® Serious Play® in Positive Psychology approach to foster the growth mindset in a team sport athlete as he recovered from season of multiple injuries.

### **Fixed and Growth Mindset in Sport.**

The concept of the growth mindset first developed in education, and the evidence that interventions impact academic outcomes is replicable (Yeager et al., 2019). The framework has been extended and the mindsets that individuals hold about their

sporting performance correspond, for instance, beliefs about sporting ability being fixed predicts the use of self-handicapping strategies, (Dweck & Molden, 2017, p.132). A current focus of research is under what circumstances do growth mindset interventions manifest most strongly (Yeager & Dweck, 2020).

Within a particular ability domain, individuals have predominately fixed or growth mindset beliefs. However, even successful individuals can have fixed mindset triggers. These are likely to be activated in situations where individuals feel their ability is being judged (Dweck & Yeager, 2021). Players can worry whether they have sufficient ability to meet a challenge and how they will be evaluated. Consequently, fixed mindset triggers can be activated. Individuals can become reluctant to expend effort, and any setbacks can act to confirm their fears about their lack of sufficient ability. In this way, individuals can self-handicap themselves (Török et al., 2022). When growth mindset beliefs are operating, a person can still be anxious about a challenge. However, they may also be excited about the opportunity to improve their performance, and even though they also experience setbacks, they tend to persist, and are more likely to employ mastery-oriented strategies (Dweck & Molden, 2017). Although effort is an important component of the growth mindset, increasing it by itself often does not always improve performance. The development of mastery-oriented strategies is crucial. Often individuals need resources, coaching and a supportive environment in which to foster and develop these strategies (Dweck & Yeager, 2021).

### **Lego® Serious Play® Growth Mindset Workshop**

Notwithstanding the ubiquity of playing with Lego® in childhood, persuading adults to give time to participate in a group play session is not without its challenges. Prior knowledge of the use of Lego® Serious Play® in the corporate world helps. In the current scenario, the players had worked with sports psychologists and so were open to

engaging in an ‘experiment’. A further consideration was the choice of the workshop topic. Ideas about the growth mindset are current among athletes, so the workshop provided an opportunity to learn about the scientific underpinnings of this concept and provided a venue to clarify widely held misconceptions. We contacted players through personal networks and introduced them to the idea of the workshop. Working to develop rapport with them was vital, as this opened a trusted line of communication. This was also important in managing expectations. Most people find these workshops fun, but they are also a means to facilitate serious thinking about the growth mindset. Finding that balance between not over emphasizing the fun element, which can attract interest, at the expense of the thinking work involved in the workshop, can be difficult to achieve. This makes the pre-workshop phase of engagement important to the success of a workshop itself.

In its original corporate setting, participants had fun playing with Lego® bricks with the serious intent of solving work problems. Roos and Victor (2018) describe three key phases in the process of Lego® Serious Play®. During the first, participants consider a question. They then each build an answer using Lego® bricks. Players tap into their creativity and have fun as they play and connect bricks. At the end of this phase, there is a sense of fulfillment at having created something new. In the second phase, players interact by sharing the stories of what they have built, and this creates a shared understanding of each other in the group (Wheeler et al., 2020). When an individual shares what they have built, they can, with questions from others, think more deeply about what they have constructed. This can lead to a third phase, that of transformation, where individuals can have moments of ‘Aha’ and ‘Wow’ and where their thinking can change. This is an active learning process whereby they integrate their experiences with those of their fellow builders and arrive at new conclusions.

In 2010, The Lego Group released Lego® Serious Play® as an open-source methodology. Since then, its use has expanded beyond the corporate boardroom. This extension into the sporting arena encourages players to strengthen the resource of growth mindset beliefs as they use these to work to overcome fixed mindset thinking (Dweck & Yeager, 2021), such that individuals can more successfully face challenges.

### **The Gaelic Athletic Association**

The Gaelic Athletic Association (GAA) is an Irish amateur sporting and cultural organization which has an international reach. Hurling is one of three native Irish games it fosters. UNESCO (2018) has designated it as an intangible cultural heritage of humanity. The aim of the game is for players to hit a small ball with a hurly (traditionally made of ash) through the opponent's goalposts. The team comprises of fifteen players per side. Although an amateur sport, players compete with a professional ethos. It is a fast-moving game with high physicality. Although they wear helmets, they do not wear protective body padding and injuries can be common (Watson, 1996).

The GAA is geographically based and cultivates pride in the local community. Hurlers can play for their local clubs, districts, and counties, depending on how good they are. Playing for your county is the highest level at which a hurler can perform. Every year counties compete to win the All-Ireland Senior Hurling Championship, which was first staged in 1887. The Fitzgibbon Cup is the premier hurling trophy for third level higher education institutions in Ireland. It was first played in 1912.

### **The Growth Mindset Workshop**

Sam (not his real name) was a participant with six other members of a university hurling team who had just won the Fitzgibbon Cup. They were all in their twenties. We selected Sam's experience as it illustrated the operation of growth mindset thinking in how he

recovered from an injury prone season, and how working with Lego® helped him become more aware of this resource and how it operated in his sporting life.

At the start of the workshop, we introduced the participants to the concepts of fixed and growth mindset thinking and the research findings underpinning this approach, with a particular emphasis on sport. We used a question-and-answer format. Dweck and Yeager (2021) argue that making the scientific case for the growth mindset is an important component of an intervention. However, teaching people about the growth mindset does not guarantee change. An intervention should also motivate participants to take actions to support their new understandings (Dweck & Yeager).

The Lego® Serious Play® in Positive Psychology session was based on a ‘Mind Your Mindset’ workshop (Bab & Boniwell, 2016) and both authors co-facilitated the session. The purpose of this workshop was to introduce the concept of fixed and growth mindset thinking to the participants so as to allow them to identify instances these types of thinking. We asked them to build brick models that would allow them to tell a story. In listening to the group discussion, they could resonate with instances of growth mindset thinking in others and then incorporate it into their own models. This is an important component of the process, as the strategies an individual routinely uses may be sub-optimal, and therefore insufficient to support improved performance. Consequently, incorporating strategies that worked for others could make a difference to their performance. Although each person builds individually, the group provides a context for them to tell their stories and a forum for group learning. This can establish conditions for psychological safety (Quinn et al., 2022).

The session began with a series of Lego® ice-breakers, for example, build the tallest tower that could stay standing within a minute. Once the group warmed up sufficiently, the workshop proper began. The workshop lasted approximately three hours.



They first built a model to identify fixed mindset thinking, something they found challenging in their sporting life, had tried to overcome, but had failed. They then attached some red bricks, which represented fixed mindset highlights, to locations on the model where such a mindset might have held them back or created difficulties. This allowed them to notice their fixed mindset triggers (Dweck & Yeager, 2021). They then build a model of the growth mindset, a skill in which they once had low ability but now performed well. They attached some green bricks, growth mindset highlights, to locations on their model where these beliefs might have helped them overcome their challenges. They then used connecting bricks to link the red and green bricks as a way of exploring how their growth mindset thinking might inform their fix mindset challenges. This allowed participants to see how they could work from fixed mindset triggers towards more growth mindset thinking (Dweck & Yeager, 2021). At each stage, the participants shared what they had built with the group, and throughout, we told them to take photographs of their models with their phones.

Each Lego<sup>®</sup> build was a metaphor of a participant's thinking, one that was unique to them. It was important that we as facilitators did not impose our interpretations on these, so as not to interfere with their sense of autonomy. To achieve this, a Clean Language questioning style was used (Lawley & Linder-Pelz, 2016). Consistent with this approach, a metaphor that a person generates themselves can be a more powerful agent of change (Thompson, 2021). To facilitate this, we repeated back what the builders said using a question format style. In this way, they heard their own words, and the question allowed them to reflect further on them. We used the following two Clean Language questions to help the builder discover more about their model.

What kind of X is that (X)?  
Is there anything else about X?

X represented a word or phrase the builder had used to describe what they had built. For example, if a builder used the word Wheel in describing their model, we could ask: “What kind of Wheel is that”, or “Is there anything else about that Wheel.” By asking about specific features of the model we encouraged them to remain connected to it, and thus discover more. Commonly, individuals build by following their intuition. They click some bricks together and see where it leads. Then add some more bricks, and the model takes on form. This is the essence of Hands-on Thinking™ (Bab & Boniwell, 2016), and this allowed them to tap into their intuition. In addition, we also, when appropriate, asked questions to consolidate their learning, for example:

What do you know now about the growth mindset?  
What difference does knowing that make?

The other participants also asked questions. We acted as gatekeepers to ensure that they framed these so as not impose their own perspectives.

### **Sam’s Experience**

Sam is a postgraduate student who has represented his county in hurling. He described himself as extremely self-motivated. “It’s just about maintaining consistency. It’s not about being boring and doing the same things every week.....stay on track in terms of the core principals of what you’re doing.” Sam has recovered from a season of multiple injuries. “Not last year, the year before last, I got about seven hamstring injuries in one year and I was playing with around eleven GAA teams.” Because of this, he changed his strategy. “I just said it would be better if I just focused on myself and said ‘no’ more often, rather than saying yes to everything and going through the motions.”

He believes the buoyant atmosphere created by team management was the foundation of their Fitzgibbon championship success. “It’s good for the group like, especially for college lads. We’re all young enough like so, if you kind of feel optimistic and positive

about something, there's a bigger chance you'll play well." Considering his insights from the workshop, Sam said,

Say, if you haven't completed a task you'd normally say 'Oh I didn't get that done,' whereas now you might say 'I didn't get that done yet,' .... So that you can still achieve it, if you haven't achieved it...not as fixed, you're kind of adding a yet to everything, which is a positive thing, I suppose, really.

Here, Sam is articulating a core component of the growth mindset (Yeager & Dweck, 2020), that effort brings about results. On how Lego® Serious Play® helped him think things out, he said:

I found that the Lego was good because it kind of let your imagination work with your mind, to kind of form new ideas in ways that you wouldn't be able to do just through your mind... I thought that the Lego helped me a lot in terms of explaining things. I found it was easier.

An illustration of this is a model that Sam called the four pillars of success (see Figure 1). This consisted of four pillars that were connected to each other with ladders. "I was talking in terms of preparation for the games, so the four pillars would have been nutrition, so your food, hydration, sleep and the fourth was kind of attitude towards training....They (the ladders) are all interrelated and they are all connected ... it is easily done if you stay on track and keep a nice routine". By building with Lego®, Sam could crystalize his thinking about this. "I would have been aware of them, but just not as four pillars, but I never laid them out before me and said, 'Right, what do I have and what do I need to do'".

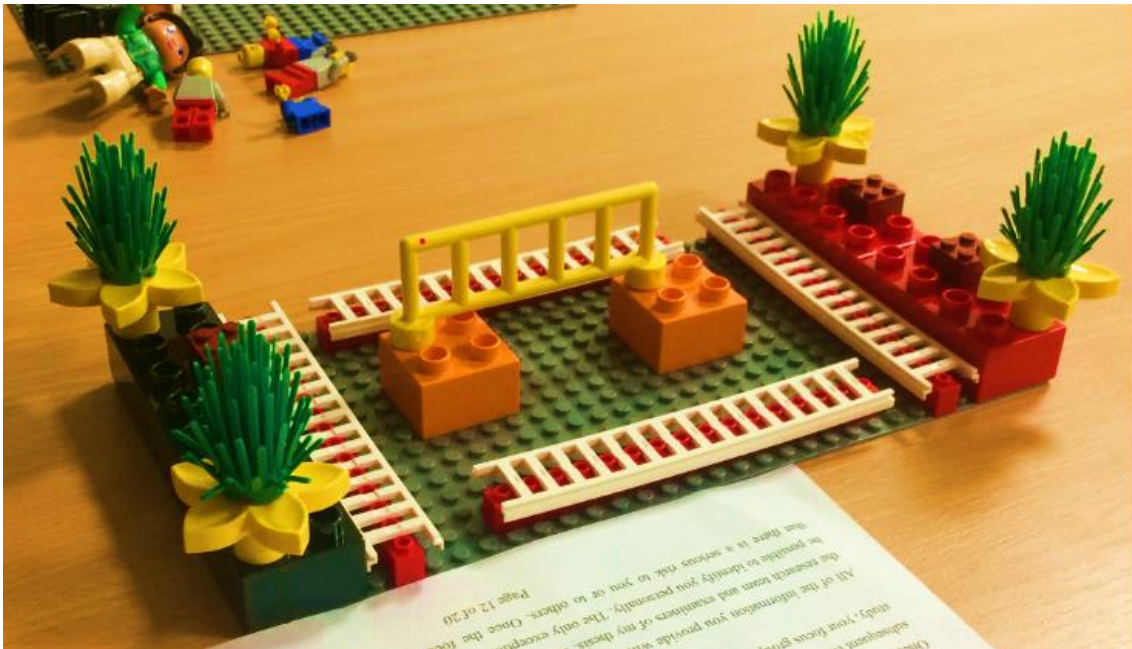


Figure 1: The Four Pillars of Success

This is an important feature of Lego® Serious Play®. The Lego® model physicalizes thinking, in this case the processes involved in his preparation routines. As his thinking took on a physical reality, he could then examine it more objectively. This allows a builder to test the logic of their thinking and make changes, should they be necessary. Talking about the barriers in the middle of the four pillars: “You’re like a lion getting through those barriers.” This is strong dynamic visual image of the resource of growth mindset thinking that Sam can easily remember and access when needed.

Sam placed green bricks in his model to represent points of growth mindset thinking.

He reckoned he was picking up injuries because he was saying yes to too many coaches.

He then placed a green brick under himself. This represented:

just being more sturdy in myself and caring about my own body more, like you know...Recovery is getting better and better each year, like there’s better strategies and better techniques so you have to constantly move with the times.

When he was getting injured, he believed people were taking advantage of him, and he needed to protect himself from them. Now he placed a green brick, a growth point, under other people, this represented an important change in his thinking. Dweck and Yeager (2021) identify this as an important component of an effective intervention, allowing people to identify fixed mindset triggers and then discover how they could work towards growth mindset thinking.

Use them positively rather than negatively and kind of take pieces from everyone. I suppose if you surround yourself with good people and you learn off each person and eventually that'll form good habits and it'll bounce back off yourself.

Sam is referencing another important component of the growth mindset (Canning et al., 2020), incorporating the experience and expertise of other people in his strategies. This a real transformation of his thinking about other people, from having to say “No” to viewing others as resources. Roos and Victor (2018) would describe this as the phase of transformation. Safety overarches Sam's new approach to playing. He illustrated this by placing a net in his model (see Figure 2) when he linked his two builds to represent how growth mindset thinking could inform fixed mindset challenges, he developed further new insights:

It's not something you'd see in real life now but it just shows that you have to constantly adapt and change your circumstances....There's no point in building two, we'll say, leveling pieces, join them together, parallel to each other like because then you'd just be in a state of mind where you're happy and you'd stay. When you grow and adapt to changing circumstances, you do well.

This process has allowed Sam to reframe his approach to playing through the lens of the growth mindset such that he now sees his development as a player as a continuous process of change. This would suggest that he has assimilated the concept in a manner

that works for him and that this way of thinking has become a psychological resource that he can access. However, we do need to be careful not to over interpret.



**Figure 2: The Wheel of Life**

### **Final Thoughts**

Dweck and Yeager (2021) argue that growth mindset interventions work best when individuals are facing challenges in environments that is conducive to players seeking challenge and being persistent in pursuing increased performance. Nevertheless, two broad groups of players may not thrive in these regimes. Some may not improve, even though increased effort is clear. Albeit that they are operating from growth mindset beliefs, these players may need to learn better strategies, and would benefit from mentoring and coaching. Another group fails to develop and decreased effort is apparent. These are likely operating from more fixed mindset beliefs. This latter group

can benefit from growth mindset interventions to help them learn how to counter these fix mindset triggers in the face of challenge.

This work contextualizes the insights of Quinn et al. (2022) and Wheeler et al. (2020) within a sporting context, that is how the use of Lego® Serious Play® in Positive Psychology can lead to new insights and learnings. Quinn et al. argue that this a result of fostering a sense of psychological safety where, through playfulness and creativity, individuals have more time to think things out. Individuals can then use these insights as a resource when facing challenges. Further, in calling to mind the Lego® model, tis resource can become more visible and thus more available when they confront challenges, and fixed mindset thinking is triggered.

By physicalizing mental concepts, Lego® Serious Play® can draw out distinctions that are important, and this is where listening to other builders discussing their models in the group can be important. An example of this was the idea of being a selfish player, and how Sam articulated what this meant for him, compared to another player.

... X was talking about being more selfless on the ball but then I was talking about being more selfish for myself. So it was kind of the complete opposite, really because I was picking up a load of injuries because they were all pulling on me.

In the debriefing phase of the workshop, one of the other players remarked on how much they had enjoyed the experience, and how it allowed them to understand each other's points of view. Another participant said that they had never discussed these things before so openly. Wheeler et al. (2020) reported similar findings with a group of university researchers who participated in a Lego® Serious Play® workshop.

The Lego® models that Sam built remained in his memory. When we checked in a week later, he was still making connections between them and his life. Consequently, we

recommend participants take photographs of what they have built, and that afterwards they take time to look at them. This can strengthen the resource of the growth mindset. A conversation using Lego® bricks differs from the usual person-to-person dialogue. Here a person talks to an object (bricks), and the other person also talks to it. This can promote a more open and non-judgmental awareness of thoughts and encourage psychological flexibility rather than automatic reactivity. Further, building with Lego® contains the implied metaphor of deconstructing a model (a pattern of thinking) into its component bricks, and then using these same bricks to reconstruct a new model, a way of thinking. This is a powerful metaphor for how change occurs, using what you have to build something better. It is this which gives the process its power.

The growth mindset frameworks can provide managers and coaches with a thinking tool to categorize players into three different groups such that they can optimize player talent through implementing targeted strategies. In the first group are those who are improving in response to challenges, they are operating from growth mindset beliefs. The second group is not improving as much as the first group, although they are expending effort. These players likely need mentoring to develop more effective strategies. Players in the third group are not improving even though they have talent. Here fixed mindset triggers are being activated in the face of challenge. It is this latter group who can benefit most from growth mindset interventions.



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