

## Enhancing student understanding through playful learning using Playmobil pro

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### Abstract

A growing body of evidence shows the value of playful learning and using playful approaches such as Lego Serious Play. However, little research has investigated the effectiveness of Playmobil pro to support higher education teaching and learning. This case study investigates how Playmobil pro can be used to support final-year Primary Education Studies undergraduates to deepen understanding through a playful approach. Methods used are the analysis of Playmobil pro representations and exit tickets completed by participants. Playmobil pro supported student understanding by providing a play-learning tool to assist the construction of models in order to create meaning and support rich discussions about concepts. The implications of this research include the potential of Playmobil pro to be a tool used in higher education to support student learning and engagement.

**Key Words:** Playmobil pro, playful learning, exit tickets.

### 1 Introduction

Playful approaches to learning are well established where children are concerned (Piaget, 1999; Papert, 1980). Furthermore, Papert (2002) coined the term ‘hard fun’, explaining the notion that learning through play can be intellectually challenging to the individual. Building on play-learning approaches used with children, a growing body of evidence demonstrates the benefits of play in higher education in terms of engagement, creativity, multi-disciplinary learning and conceptual understanding (Rice, 2009). Furthermore, James (2019) argues that some critics postulate that playfulness in higher education is too focused on entertainment and not on learning. However, James justifies a playful approach to learning in universities as “*play makes us better at the complex, challenging, horizon-stretching work that a university needs to do*” (2019, p.18). Whitton (2018, p.3) explains that “*a magic circle of playful learning*” should be created, providing a safe environment for players to participate, as should different expectations from those in the real world. Whitton (*ibid.*) goes on to say that playful tools – such as games and toys – and playful techniques – such as ‘making’ and ‘role play’ – can be used. To engage in playfulness, learners require “*a state of mind or an attitude*” to participate in a new way of working (Whitton and Moseley, 2019, p.14). When considering this notion of mindset, playful approaches may enhance resilience as learners encounter challenges in a safe environment, so minimising the risks associated with failure (Heljakka, 2023).

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Lego Serious Play (LSP) is a playful technique to facilitate learning and uses the popular construction toy Lego to support understanding. Originally developed for managers to support business strategy development, LSP allows participants to “describe [creatively] what they already knew in a new way, and to collaboratively develop new insights” with others (Roos and Victor, 2018, p.335). These insights are developed by building with Lego bricks to tell stories and create representations of metaphors (*ibid.*). This approach builds on the notion of constructionism (Papert, 1986), whereby we make sense of the world and learn through the construction of a meaningful model. LSP use follows the “core process” which consists of four phases (Wheeler, 2020). In phase one, participants are asked a question or set a challenge. Phase two gives participants time to create a Lego representation. In the third, participants share their representations. The final phase involves the sharing of reflections about the activity.

As well as being used by businesses, LSP has been deployed in higher education, with this constructionist approach. When considering LSP in higher education, McCusker observes that “the richness is not so much in the LEGO bricks but in what they represent” (2014, p.29), for participants may reflect on experiences and learning. Linking to this work on reflections, Warburton, Brown and Sandars (2022) note that LSP allows higher education learners to reflect, through play, on prior knowledge and develop new ideas individually or as a group. Furthermore, LSP has been used in a university cell biology module (Garden, 2022) to enhance understanding of difficult but essential threshold concepts, such as gene expression and cell division. Ajibede and Hayes (2022) used LSP as a research method with nurses – originally from Nigeria – as they studied in the United Kingdom, in order to facilitate discussions and gain insights into their lived experiences. Using LSP offers a “low floor, high ceiling”, with the learning approach easily accessible to participants and allowing a rich range of creative outputs (McCusker, 2014, p.34). McCusker (2020) elaborates in a further article that LSP, owing to its playful nature, can reduce social hierarchies and enable all participants to share their knowledge and beliefs. By reducing hierarchies, participants experience “listening to understand rather than respond” (Dann, 2018, p. 130), so that learners learn from others in sessions.

Just like Lego, Playmobil may support playful learning too. It was created in 1974 by Hans Beck, a German toymaker asked to design a small human figure for a toy vehicle (Haymarket Media Group, 2012). Following the initial launch of a range of native Americans, knights and construction workers, further figures and toys have been created over the years (*ibid.*). Although known primarily as a children’s toy, Playmobil has been used in a limited number of psychological interventions, including helping individuals to enhance their social and emotional awareness by creating real-life scenarios with Playmobil (Raimundo, 2020) and reducing the anxiety of four- to seven-year-olds visiting the dentist by demonstrating with Playmobil what would happen in the dental procedure (Goyel *et al.*, 2022). A limited number of studies have used Playmobil as a learning resource. McCarthy (2011) used Playmobil figures with post-sixteen A-level students to recreate scenes from Shakespeare’s *Hamlet*. This developed student understanding both of staging for the play and of the meaning and implications of the quotations they had selected for their Playmobil figurines to speak. Furthermore, Lefevre-Scelles *et al.* (2021) created a mass-casualty medical simulation which helped medics to rehearse various terrorist incidents. Taking this application of Playmobil to adult contexts further, the company released Playmobil pro sets in 2020. Just as LSP in its initial stages was designed for businesses, Playmobil pro is

primarily aimed at companies to explore challenges, such as project management and design thinking (Playmobil, 2022), through play. Such sets consist of unpainted figures as well as hats and other small accessories. According to Chayaratanasin, Rattanan and Schafer (2020), the playful use of unpainted Playmobil figures allows users to create and interpret representations individually.

Up to now, the use of Playmobil pro as a tool to enhance playful learning in higher education has not been investigated. This case study therefore seeks to answer the research question 'To what extent does Playmobil pro support student understanding through a playful approach?' Throughout this case study, I explore how Playmobil pro may be used as a resource to support playful learning in higher education.

## 2 Method

### 2.1 Participants

This case study was completed during the 2022/23 academic year in a post-1992 university aiming to widen the participation of individuals from all backgrounds to achieve career-focused degrees. Participants in this case study were seven final-year undergraduates studying for an accelerated BA Primary Education Studies (PES) degree, the course of which lasts two academic years. The degree develops the content knowledge and pedagogical content knowledge (Shulman, 1986) of the English National Curriculum (Department for Education, 2014) for children aged five to eleven. The PES degree also explores child development and the philosophy and sociology of education in the primary age range. The participating undergraduates were studying a level 6 module about teaching, to primary-aged children, environmental and sustainability education through the arts. All seven students in the group participated in this case study.

### 2.2 Ethics

Ethical approval was obtained from my university ethics panel prior to beginning the project. I included the use of Playmobil pro in my lectures and seminars, but explained to students that I was also collecting data and that students were not obliged to be part of this research element. Students were given a participant information sheet and consent form to sign if they wished to participate. Potential participants were verbally reminded that they did not need to take part in the research aspect of using Playmobil pro as a learning and teaching resource in lectures.

### 2.3 Procedure

Playmobil pro was used as a tool to support student learning in a Level 6 module exploring environmental and sustainability education through the arts. Students shared the Playmobil pro starter kit in small groups. When students were first introduced to the kit, they were given time to explore the Playmobil figures and props before starting the activity. This helped to build up familiarity with the materials in the kit. At the start of a Playmobil pro activity, students were posed a question or challenge. In response to this stimulus, students

represented opinions about an issue or understanding of a concept. Students chose to work individually, in a pair or in a small group. After ten to fifteen minutes playing with Playmobil pro, students then shared their representations with the rest of the group, explaining what their creation represented and offering any reflections on the task.

If students wished to do so, they were invited to upload a photograph they had taken of the representation to an online discussion board or to email the photograph to me. After the Playmobil pro activity, students were also invited to complete an exit ticket at the end of the session to record briefly their reflections on a small slip of paper which they gave to me (Sarles and Owen, 2012). Leigh (2012) also identifies that exit tickets enable students to reflect on their learning. Using the exit tickets, students were asked to reflect on their experiences of using Playmobil pro and to say if it had affected their learning. I chose this data collection method as a simple means of collecting qualitative reflections on the Playmobil pro activity immediately after a session.

### 3 Outcomes

#### 3.1 Playmobil pro representations

A Playmobil pro activity was integrated into most weekly seminars to enhance active learning. Activities included: 1) creating a representation of what sustainability meant to each student individually; 2) making representations of specific sustainability development goals (SDGs) such as 'SDG 4: Quality Education'. In one session, students made a stop-frame animation about an environmental issue, using Playmobil pro to learn about a practical classroom approach to teach children about sustainability through the arts and technology.

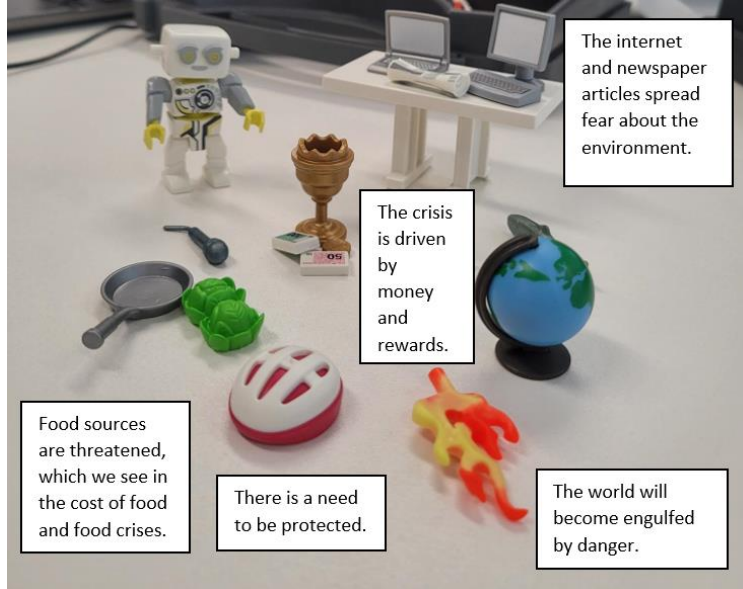
Though Playmobil pro was used in a range of activities, this section will focus on the use of this resource in a seminar concerning eco-anxiety. Coffey *et al.* define eco-anxiety as "*the distress caused by climate change where people are becoming anxious about their future*" (2021, p.1). The learning outcomes for the session were to understand eco-anxiety and to review research into children's feelings of eco-anxiety. Participants were asked to make a representation of eco-anxiety and its causes. Following this introduction, participants collaborated with a partner to make a representation. After creating their representations, participants discussed what they had created with the whole group. Photographs of the representations were annotated with text boxes illustrating what different elements represented, based on the method used by McClusker (2014) when investigating LSP representations.

Both figures 1 and 2 demonstrate the Playmobil pro representations created by the participants to show their understanding of eco-anxiety and its causes. Both representations illustrate that Playmobil pro can be used as a playful tool and as a playful technique to support learning. The activity illustrated the 'magic circle' proposed by Whitton (2018, p.3) with participants playing with their ideas and feeling safe enough in the space of the classroom to share personal anxieties about the environment's future that had been triggered by information they received through social media. Such points were underpinned by the ability of participants to be reflective. As in LSP, where participants create metaphors using Lego (Roos and Victor, 2018), participants did the same with Playmobil pro. For example, in figure 2, a participant represented, with a flame accessory, the world being

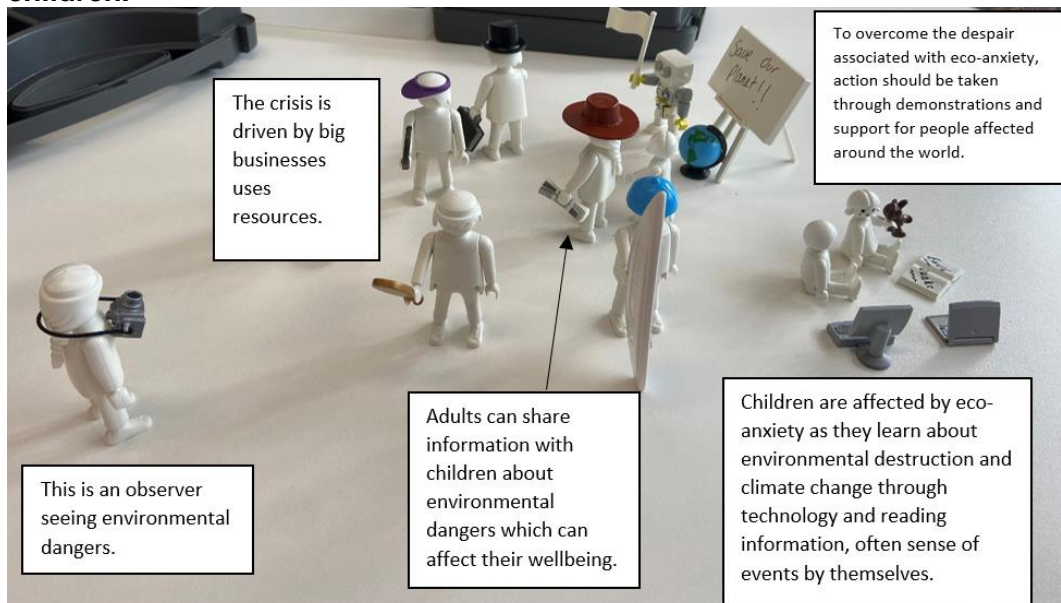
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overwhelmed by environmental challenges. Like the notion that the richness of LSP creations comes both from what they represent and from subsequent discussions (McClusker, 2014), Playmobil pro representations had the power to facilitate rich conversations among participants.

**Figure 1. A pair of students' beliefs about eco-anxiety and its causes.**



**Figure 2. A pair of students' beliefs about eco-anxiety, its causes and impact on children.**



### 3.2 Exit ticket

The exit tickets showed student perceptions of using Playmobil pro to support learning. At the end of sessions, students were provided with a Post-it note exit ticket to articulate what they felt about the experience of using Playmobil pro. The use of exit tickets enables “capturing individual bursts of thinking” (Leigh, 2012, p.190). After completion, the exit ticket

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comments were thematically analysed with Nvivo, using the method developed by Braun and Clarke (2006). Deductive and inductive approaches to the coding were applied.

One theme mentioned by four participants was that using Playmobil pro was engaging as part of the learning process. One participant wrote: "Playmobil was a good and engaging aid for our learning." Two respondents enjoyed using the resource even more and wrote: "I loved using the Playmobil." These points corroborate the notion that playful learning "embraces whimsy, the spirit of the carnival, creativity, humour, surprise and imagination" (Whitton and Moseley, 2019, p.14).

Another theme that emerged from the thematic analysis was that Playmobil pro allowed a visual representation of ideas. This theme was mentioned by four participants, with one respondent writing: "Allowed me to make representations of abstract concepts." These comments relate to the concept of constructionism (Papert,1986), for participants made sense of ideas through the creation of Playmobil pro representations.

The third theme identified in the exit tickets was that the support provided by making a representation with Playmobil pro facilitated subsequent discussions. This theme was mentioned by two participants, with one commenting: "I struggle to verbalise my thoughts and this provided an effective alternative to expressing my ideas." Their points support the idea of playful learning's role in enhancing student engagement and conceptual understanding (Rice, 2009) as well as the role of 'hard fun' which enables learning to be facilitated through play.

### 4 Conclusion

This case study describes the use of Playmobil pro as a resource to support student learning and conceptual understanding using a playful approach. Through the data collected, students were able to demonstrate their learning through visual representations. Some of the group also perceived that Playmobil pro supported their understanding and ability to show their thoughts in a creative way. This case study shows that Playmobil pro may be used as a new tool for play-learning in higher education.

Although a small sample size was used, this pilot case study offers insights into how Playmobil pro can be used to facilitate understanding and dialogue about concepts. A further limitation is that the research was undertaken during one trimester, which does not show the effects of using Playmobil pro over a sustained period.

Playmobil pro as a tool for learning through play may be applied to a range of different topics to support learning about concepts, team-building and reflective practice. Playmobil pro figures may be particularly applicable to curricular subjects focused on humans, such as education, social work, nursing and sociology. However, Playmobil pro might be less appropriate for covering concepts found in courses exploring different aspects of the world, such as the natural sciences. The limited range of small props in each kit might also narrow the possibilities for representing scenarios and situations.

As for future developments, Playmobil pro will be used for an entire academic year to understand the extent to which the resource may affect conceptual understanding over a

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longer period. It will also be used with a larger cohort to understand Playmobil pro's effectiveness in that context. Since LSP is established as a resource to support student learning through play, it would be beneficial to compare the uses, benefits and disadvantages of both LSP and Playmobil pro. The participants in this case study were primary education studies students and further research could explore whether aspiring primary school teachers prefer playful approaches to learning compared to students studying other degree programmes.

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