

Pilot project

Highly commended for the Paul Webley Award for Innovation in International Education 2018

Supporting the engagement and experience of international students in group-work activities

University of Strathclyde



Pilot project into the international student experience in the UK 2017-18

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Supporting the engagement and experience of international students in group-work activities University of Strathclyde

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Project aims

The aims of this pilot project were to:

- establish if the use of LEGO® Serious Play® (LSP) can enhance the experience of non-native speakers (NNS) of English in group work activities at the University of Strathclyde, and
- evaluate the use of LEGO® Serious Play® in the HE setting.

Summary of project outcomes

This pilot project offered three separate University of Strathclyde MSc class groups the opportunity to use LSP in a group work activity designed to support their transitions from teacher-led, class-based learning to more independent 60-credit research projects. The groups consisted of both non-native speakers (NNS) and native speakers (NS) of English.

Results indicate that LSP was effective in enhancing the group work experience of both NNS and NS of English, supporting the notion that inclusive learning and teaching practice benefits all students.

Background information

With a core undergraduate and postgraduate student population of 20,000 students (5,000 of which are international) Strathclyde University has a strong reputation as a leading international technological university with our international outlook permeating everything we do. This is reflected in the increasingly international and collaborative nature of our research, scholarship, knowledge exchange and innovation, but also in our drive to deliver a teaching and learning experience which equips Strathclyde graduates with the necessary attributes to flourish in the global workplace. As such it is essential that we adopt engaging ways of creating flexible and innovative learning environments that support all students to achieve their potential.

The problem with groupwork for NNS of English

“Completion of collaborative learning activities in culturally diverse small groups is a highly complex, socially and emotionally demanding experience.”

(Kimmel and Volet, 2010)

All students find group work activity challenging for a variety of reasons. International students, who will be referred to hereafter as non-native speakers (NNS) of English are well-recognised in the literature as facing particular challenges in UK academic life. Difficulties facing NNS include self-perceived language deficiencies and differences in educational background (Berman, Cheng 2001, Hardman 2016) and these challenges impact on the ability of these students to participate fully in group work activities

(Medved 2013). Importantly, learning must be available to all students. Having an understanding and recognising the challenges facing NNS participating in group work is the first step to supporting these students.

Perhaps not unexpectedly, the literature highlights that speaking in English within a classroom situation is a task that NNS find difficult. Some of the challenges (related to group-work) cited in the literature for NNS are outlined below:

- Speaking tasks identified as being most difficult were: delivering oral presentations and taking part in class discussions (Berman, Cheng 2001).
- Lack of confidence in speaking meant that NNS lacked confidence to speak up/participate in class discussions (Medved et al 2013, Guo and Chase 2011).
- NNS often feel their language skills are insufficient to allow them to fully engage in a group work environment of their peers, which may include heated and passionate, fast-moving debate. Engagement in this may be viewed in some cultures as disrespectful (Taylor, Ali 2017).
- The prospect of making mistakes causes anxiety (Kimmel and Volet 2012); and
- NNS feel they need time to formulate a response to questions when compared to NS, a lack of response may be mistaken for a lack of knowledge, which is not the case (Jin 2017).

While academic challenges faced by NNS are readily identified in the literature, there is a lack of practical solutions to support group work in the higher education (HE) classroom. This pilot project sought to evaluate if LEGO® Serious Play® could enhance the engagement and experience of NNS in group work activities.

The authors fully appreciate that the challenges outlined above may be experienced by all students, including native speakers (NS) to varying degrees. This project was undertaken with a further aim that potential benefits could be realised for all students.

LEGO® Serious Play® as a Practical, Innovative Solution

LEGO® Serious Play® (LSP) is a thinking, communication and problem-solving tool. It is proposed that LSP provides a practical and innovative solution to address the challenges faced by NNS of English in HE classroom group work activities.

The principles of LSP are such that a very particular inclusive group dynamic is generated and this is done through ensuring that:

- everyone is required to participate all of the time;
- everyone is required to participate in all of the phases of the LSP process; and

- participants are given time to reflect and gather thoughts before speaking to describe their model.

The principles with regards to how the LEGO® bricks are used in LSP also support the generation of an inclusive environment for learning and these include:

- the LEGO® bricks are used to unlock and construct new knowledge;
- there are no right or wrong ways to build with the LEGO® bricks;
- everyone has an obligation to build and the right to tell the story of their LEGO® model;
- the builder owns the LEGO® model, its metaphors, its meaning and its story;
- participants must accept the builder's meaning and story of the LEGO® model; and
- only the LEGO® model and its story can be questioned – not the person.

The LSP method offers a number of solutions to specific challenges faced by NNS of English in HE classroom group work:

- LSP offers a universal language of building through which storytelling takes place where the builder is safe in the knowledge that questions are asked of the model. It should be reinforced that the focus of LSP is in fact not the bricks or the models created but the story and metaphors created from the bricks. (Kristiansen and Rasmussen 2014).
- LSP is a useful way to encourage creative and innovative thinking and facilitate in-class discussion. It is a technique which is proposed to improve problem-solving. (Kristiansen and Rasmussen 2014).
- Lego® models serve as a basis for group discussion, knowledge-sharing, problem-solving and decision-making. By focussing on the creative task, learners can 'step outside' themselves in order to reflect. With the introduction of a delay, this allows participants to 'think with their hands'. Importantly the Lego® models and meaning belong to the builder. Following LSP etiquette others may ask questions of the model and the story, not the individual, thus creating a 'safe' environment (Kristiansen and Rasmussen 2014).

Project design and evaluation

Led by two certified LSP facilitators, this project offered three University of Strathclyde MSc class groups (MSc Forensic Science, MSc Advanced Pharmaceutical Manufacture, MSc in Pharmaceutical Analysis) the opportunity to use LSP in a group work activity designed to support their transitions from teacher-led, class-based learning to more independent 60-credit research projects. This transition was selected as the topic

for the LSP workshop to be evaluated because,

- the same topic could be used and was relevant to all groups;
- it represented a genuine support need; and
- students electing not to participate in the activity would not be disadvantaged in terms of coverage of their course curriculum.

All three groups consisted of both non-native speakers (NNS) and native speakers (NS) of English. All students who expressed an interest in the project were provided with a participant information sheet which detailed what was involved in participating in the study. Participation was voluntary. The LSP session was offered over and above the normal project preparation. (The appendix to this report includes a copy of the participant information sheet.)

Initial survey

Prior to participating in the LSP activity, all participants were asked to complete an initial electronic survey (on their own devices) at the beginning of the LSP session in order to:

- provide consent for participation in the activity and this study;
- self-identify as a NS or NNS of English; and
- rate their perceived ability in relation to a number of everyday university tasks using a 5 point Likert scale.

(The appendix to the online version of this report contains a copy of the survey).

All participants included in the study provided consent for their inclusion, and of these participants, 50% identified as NNS with 50% of the overall group identifying as NS of English. (See also the appendix to the report for the online version of the consent form.)

The initial questions related to the participants' perceived abilities provided information about the particular difficulties facing NNS, particularly in relation to group work activities.

Findings from this initial survey included,

- 36% of NNS indicated that they found giving oral presentations in class somewhat difficult compared with 23% of NS.
- 43% of NNS expressed that taking part in class discussions was neither easy nor difficult while 100% of NS report this as being extremely easy or somewhat easy.
- 36% of NNS reported that asking questions in class was neither easy nor difficult with 8% of NS agreeing. The remaining 92% reported this task as being extremely easy or somewhat easy.
- 30% of NNS indicated that talking in a group in class was neither easy nor difficult whereas

100% of NS indicated that this was very easy or somewhat easy.

These findings supported the challenges faced by NNS cited in the literature and provided specific information about the cohorts participating in the LSP activities.

The LSP session

A LSP session was designed in consultation with the instructors for the cohort to ensure it met with their objectives and expectations for the session. The session was designed to follow the four steps of the LSP process:

- **Challenge:** the facilitator asks a question to the group
- **Build:** all of the participants build their answer using the Lego® bricks
- **Share:** all of the participants have the opportunity to share their model and its meaning with the rest of the group.
- **Reflect:** questions and reflections

During the LSP activity the facilitator led the participants through a detailed and structured LSP session that is summarised in the following steps:

- **Skills building:** this allowed participants to have some practise and demonstrate Lego building skills required for the session in a fun way
- **Individual build:** the participants were asked to build their proposed research project which they then modified to represent problems that they might encounter in their projects
- **Shared build:** the participants worked in teams of four to create shared models of potential

Fig. 1



Figure 1: A participant's individual build from the LSP session. Describing this build the student expressed that from the outset the prospect and challenge of the master's project was well-defined with a clear goal depicted by the front view photograph on the left. However, the reality was quite different, looking at the same build from the side with numerous challenges expected along the way depicted by windows that do not open, walls and barriers and trees blocking the path.

problems where, as a necessary part of the shared build, everyone's ideas were incorporated into the final model

- **Discussion and reflection:** participants were supported to use the models to reflect on what they had learned, what they might need to do now, and what action points they would take away from the session

Figure 1 shows an individual build from one of the participants and Figure 2 shows an example of a potential problem identified in the group build. The engagement and degree of insight evidenced by the students is clear. LSP allows them to 'tell their story' using the bricks, effectively using metaphors to do so.

Post-session evaluation

Following the LSP session, participants were asked to evaluate their experience of completing group work using LSP by completing an online survey. They were also invited to attend semi-structured interviews to provide feedback on the session. (The appendix to the online version of this report includes a copy of the consent form used prior to the interviews.)

The results from the post-session survey can be seen from the graphs in Figure 3 and are summarised below:

- 80% of NNS and 75% of NS agreed or somewhat agreed that "time designated to building the LEGO® model helped me to formulate a response to the question asked."

Fig. 2



Figure 2: In this model from a group build, students have identified the importance of maintaining a positive relationship with laboratory technicians. The flowers on the lab technicians head represent knowledge and experience and the phone represents the importance of communication.

- 80% of NNS and 75% of NS agreed or somewhat agreed that “the LEGO® model I built helped me to formulate a response to the question asked.”
- 60% of NNS and 50% of NS agreed or somewhat agreed that “I was able to communicate more effectively in the LSP session when compared to normal group work settings.”
- 60% of NNS and 50% of NS agreed or somewhat agreed that “I communicated with more confidence in the LSP session when compared to normal group work settings.”
- 100% of NNS and 75% of NS agreed or somewhat agreed that “I can see value in LSP as a way to learn.”

See Figure 3: Results from the LSP post-session participant survey on page 76.

Six students elected to participate in the LSP post-session semi-structured interviews, three NS and three NNS. Upon analysis of these, five key themes emerged. A few key participant statements relating to these themes are outlined below:

- Enhanced participation
“Everyone contributed, we didn’t have a big group leader, everyone could share their ideas.”
“Each had their own part to play.”
- Enhanced communication
“When you want to describe something, you can describe it more if you can also show it.”
“When presenting the group build, you can point at bits and pieces . . . you won’t lose track because it’s there in front of you.”
- Accommodates different learning styles
“Some people learn by hearing, some people learn by seeing, some people learn by doing.”



“If you build something it’s easier to remember it.”

- Facilitates modification
“Making changes in the model is very useful . . . sometimes you need to make changes to a project, we need to be able to be flexible.”
“You can change (your model) in the middle, you can change your ideas.”
- Playful learning
“Everyone seemed a bit more relaxed.”
“More fun way to look at things.”

The results overall indicated that LSP offers an engaging and innovative solution to the challenges faced in group work activities by NNS, and importantly benefits all students.



Project sustainability

Responses from the participants of this pilot study indicate that students find LSP an engaging and supportive activity for group work, not only for NNS of English, but for all students and this is encouraging for future sustainability.

Participation in this study gave the authors the opportunity to discuss this work at the University of Strathclyde's playful learning network. This has allowed the practice to be disseminated beyond the participants in the pilot project and others are expressing interest in developing skills in using the LSP method within their teaching to enhance the student experience. A further 10 staff from across the institution have now attended training to become certified LSP facilitators, contributing to sustainability and emerging institutional expertise.

LSP kits were purchased using the funding awarded for this project and have become a resource which academic staff can book and use within their teaching.

Recommendations for other institutions

The outcomes of this work have already been presented at a number of sector-relevant conferences (UKCISA and HEA Learning and Teaching conferences) in order to ensure sustainability across the sector and to support dissemination and uptake in other institutions.

A key consideration for institutions will be the initial investment expense associated with certified LSP facilitator training and kit purchases. Institutions may wish to consider training key staff (such as academic development staff) who can then disseminate key principles of the method as they relate to learning and teaching with staff from across their institutions. They might also consider an institutional purchase of LSP kit which can then be booked and used by teaching staff.

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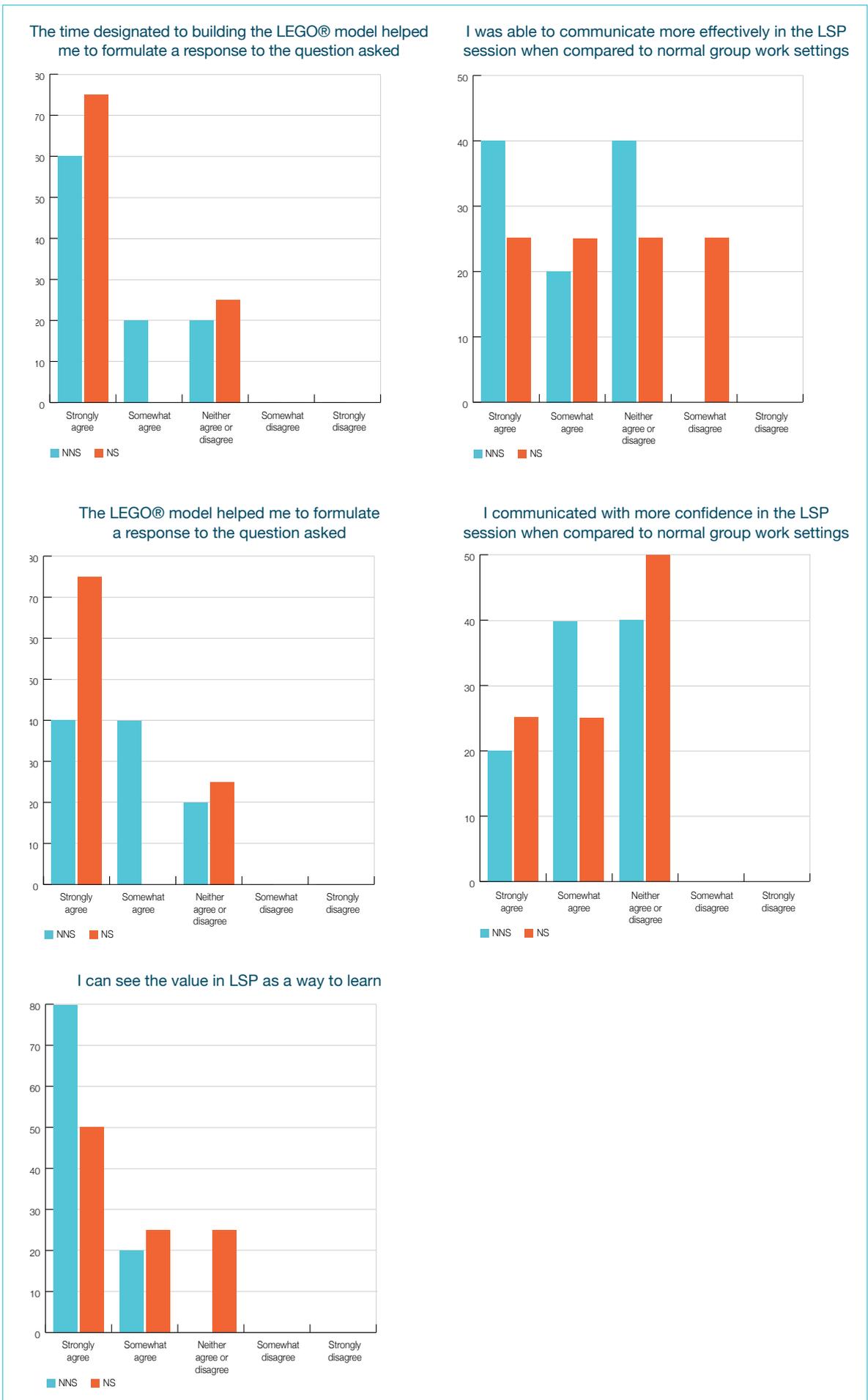
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Fig 3: Results from the LSP post-session participant survey



The UK Council for International Student Affairs is the UK's national advisory body serving the interests of international students and those who work with them.

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