**Translational research to support early childhood education in crisis settings: A case study of collaborative working with Rohingya refugees in Cox’s Bazar**

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Author Biographies

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Debra is studying for a PhD at De Montfort University, exploring how translational research can impact on educator practice to improve early childhood education for children in crisis settings. Previous publications have focused on empowerment of early years educators in the UK who become change agents through consequential reflective practice based on the development of knowledge and understanding.

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Before commencing her post at the University of Chichester, she was lecturer in Early Childhood Studies at Portsmouth University and a member of the teacher training team at Bishop Grosseteste University, Lincoln. She has published in the fields of early years, technology and humanities education. Linda also has an interest in the creative use of technology in the classroom. Her PhD thesis focused on opportunities for collaborative and creative talk using play in an immersive learning environment.

**Purna Shrestha** is the Education Lead at VSO. He is an expert in education and international development with 25 years’ experience of classroom teaching, education leadership, teacher training, project management of grass roots development works, research and advocacy works and participatory facilitation skills.

Purna has provided technical support to partners and VSO country office colleagues in 25 countries in Sub-Saharan Africa, Asia and the Pacific region since 2009. He identifies existing evidence of good practice and makes this accessible to VSO partners, staff members and volunteers in order to increase the scale and sustainability of education interventions. Purna has developed strategic partnerships and alliances with government agencies, UN agencies, intergovernmental organisations, academic research institutions and civil society organisations.

**Sarah Younie** is Professor of Education Innovation in the School of Applied Social Science at De Montfort University. She teaches on the MA and BA programmes and supervises phd research students in educational knowledge management, technology, innovation, pedagogy, professional development and management of change. Sarah has a PhD in Education and Technology. Her teaching and research focuses on change in education, in particular technology and the opportunities it affords for innovation in practice. She is the co-founder of the 'Education Futures Collaboration' charity and MESH (Mapping Education Specialist knowHow) project, which is a translational research initiative that provides evidence to inform teachers professional practice.

During her role as U.K Chair of ITTE (Information Technology in Teacher Education), Sarah has liaised with government agencies, conducted national research for government and submitted evidence for Parliamentary Select Committees. Sarah has implemented international research projects, including the EU funded ‘Learning School’ project, part of European Schoolnet Multimedia project, supported by 23 Ministries of Education; the ‘Web@Classroom’ project, awarded ‘ICT Best Practice in European Education’ in recognition of innovation. Other international projects have included the EU funded ‘European Knowledge Center' project, and currently, the EU‘Building a Research Infrastructure for School Teachers’ project. Sarah is widely published and is an editor for the ‘Learning to Teach’ book series. She is also Editor-in-Chief for the international Journal of ‘Technology, Pedagogy and Education’.

Word Count: 8,668

**Translational research to support early childhood education in crisis settings: A case study of collaborative working with Rohingya refugees in Cox’s Bazar**

This case study used a co-creation approach to evaluate the effectiveness of a translational research strategy in supporting early childhood education. How Mapping Educational Specialist Knowhow (MESH) and Voluntary Service Overseas (VSO) collaborated to enhance the training of volunteers and learning provision for 1,500 refugee children is explored. The findings highlight that: training empowered a marginalised community to enhance children’s learning; language variation was a challenge; common values enabled effective partnership working between MESH and VSO; maintaining the relationship is vital for developing socio-culturally relevant resources; MESHGuides have great potential although features could be redesigned to increase impact. The strategy addressed United Nations Sustainable Development Goal (SGG) 4, to improve the quality of education for all and SDG 5, to enhance gender opportunities for girls and women.

Keywords: translational research; crisis settings; education in emergencies; early childhood education; marginalised communities; sustainable development goals.

**Introduction**

Mapping Educational Specialist Knowhow (MESH) is a teacher/ researcher led, international, digital knowledge mobilisation system. MESHGuides are online knowledge-maps that provide research summaries for educators to inform professional practice. MESHGuides have been recognised as a global innovative translational research initiative that enables practice change (Leask & Younie, 2018; Younie, et al., 2019).

This paper investigates the Early Childhood Education in Emergencies (ECEE) MESHGuide (Laxton & Leask, 2017) that constitutes one subsection of the overall MESH project. A case study demonstrates how the ECEE MESHGuide has been used in the Jamolti Rohingya refugee camp in Cox’s Bazar, Bangladesh. The paper describes how MESHGuides, VSO and the Rohingya refugee community worked collaboratively to improve childcare and education practices and subsequently impact positively on relevant SDGs 4 and 5. The translational research process is explained including, how training for local Rohingya mothers and big sisters was developed to enable them to be Early Childhood Care and Education facilitators who actively promote playful learning in home environments. The case study evaluates the significance of MESH and the ECEE MESHGuide in developing knowledge and enabling collaborative working to improve real world educational practice. The ECEE MESHGuide, alongside the training of the volunteers, aimed to support VSO in empowering a marginalised community (SDG4) to enhance children’s playful experiences and learning outcomes (SDG5) in a crisis setting.

**Context for the ECEE MESHGuide project**

***UN Sustainable Development Goals 4 and 5***

In 2015, the United Nations reinforced their commitment to global development by adopting the ‘2030 Agenda for Sustainable Development’ (United Nations, 2015). SDG 4, pertaining specifically to education, is ambitious, committing each country to ‘ensure inclusive and equitable quality education and promote lifelong learning opportunities for all’ (ibid). SDG target 4.2 aims to ensure that all girls and boys have access to quality pre-primary education (ibid). In 2016, UNESCO highlighted the challenges of education for marginalised groups, citing refugees as one example. The report states that the refugee crisis is ‘deepening’ (2016, p. 117) with children being five times more likely to be out of school and displaced for increasingly long periods of time. UNESCO (2016) calls for such inequalities to be addressed.

The vision and principles underlining the MESH project correlate to the UNESCO (2015), Incheon Declaration and Framework for Action for SDGs. This document states that to ensure quality education that impacts positively on outcomes ‘ICT must be harnessed to strengthen education systems, disseminate knowledge, provide access to information, promote quality and effective learning and deliver services more efficiently’ (UNESCO, 2015, p. 8). Within the global SDG context, the VSO and MESH collaboration addresses SDGs 4 and 5.

***Refugee Education***

Data on refugee education generally, and more specifically early childhood education, is limited. Accurate data is difficult to capture due to a number of complex factors e.g. the transient nature of refugees, negative attitudes towards refugees by host countries and inadequate educational systems (OECD/European Union, 2018; Cerna, 2019). According to the UNCHR (2019), there are currently 7.1 million refugee children of school age and 3.7 million of these do not have access to schooling. Despite being a child’s right (United Nations, 1989), only 63% of refugee children attend primary school and access to pre-primary education is more limited even though benefits for younger children such as socio-emotional development, supporting trauma and promoting school readiness are well known and largely accepted (European Union for Fundamental Rights, 2017; Cerna, 2019; UNHCR, 2019). Girls are less likely to attend school and gender sensitive education is an ongoing challenge (Self & Grabowski, 2010). Education can be transformative in the lives of young refugees; knowledge and skills are gained, children’s aspirations raised and opportunities and life chances improved (Mason & Orcutt, 2018; UNHCR, 2019). Ultimately, ‘it is the surest road to recovering a sense of purpose and dignity after the trauma of displacement’ (UNHCR, 2019, p. 5). Where educational opportunities do exist, young refugees still encounter numerous and significant barriers to learning and achievement.  Barriers include their forced displacement, low socio-economic status, time spent on household chores, lack of access due to location, loss of identity, post-traumatic stress and understanding of the language in educational settings (European Union for Fundamental Rights, 2017; Cerna, 2019; Bakali & Watsy, 2020).

***Education in the Bangladesh Rohingya Refugee Camps***

Bangladesh hosts ever increasing numbers of Rohingya refugees, forced to flee their home country of Myanmar due to violence and persecution (UNHCR, 2019; OCHA, 2019a). Definitive figures are hard to confirm due to the enormity and transient nature of the displacement, however 2019 figures claim that over 740,000 refugees have arrived in Bangladesh since the crisis erupted in August 2017 (ibid). The total number of Myanmar Nationals now living in camps in the region of Cox’s Bazar are in excess of 910,000 and 55% are children (ibid). The speed of arrival and extensive numbers has meant educational opportunities are inadequate and accurate relevant data is scarce. Furthermore, the government of Bangladesh, who aim for the refugees to be repatriated to Myanmar as soon as possible, have placed strict restrictions on the community and consequently children are unable to integrate into Bangladeshi society (Prodip, 2017; Human Rights Watch, 2019). Families must stay within the camps and subsequently children, who would benefit from the stability of attending educational settings, are barred from enrolling at local schools.

The area of Cox’s Bazar is under particular strain (UNICEF, 2018) and the needs of the refugee communities are numerate, complex and varied. Not least is the education of children who, often traumatised by their experiences in addition to the daily stresses of life in a refugee camp, lack suitable safe environments to relax, play and learn, (Bakali & Watsy, 2020). Children are reported to be afraid when carrying out daily chores and when going to the latrines in the dark at night, limiting their freedom and movement (Severijnen & Steinbock, 2018). Even within their own tented homes children feel unsafe due to cramped livings conditions and the inability to secure the tent (Bakali & Watsy, 2020). Space for safe, playful learning opportunities is problematic for young refugees due to the number and the proximity of tents in any one area and a lack of equipment and resources (Casey, 2017; Severijnen & Steinbock, 2018). ‘According to the mothers, their children... feel trapped in the camp.... cry a lot, are low-spirited and are scared of what happened in Myanmar’ (Severijnen & Steinbock, 2018, p. 22). With the current coronavirus pandemic children’s fears have increased. In a study of two hundred children from Cox’s Bazar, conducted by UNICEF et al. (2020), 44% of children reported worries that they or family members might die from the disease and 53% of children were concerned about school closures. A number of Non-Government Organisations (NGOs) provide humanitarian aid in response to the ongoing and ever evolving plight of children and families living within the refugee camps of Cox’s Bazar.

***Voluntary Service Overseas***

VSO is a British not-for-profit international development organisation and registered charity that was founded in 1958. VSO aims to ‘put marginalised people first’ through three fundamental core approaches; resilience, inclusivity and accountability (VSO, 2019a). A ‘volunteering for development approach’ seeks to empower communities to take ownership of making change happen ‘to create a fair world for everyone’ (VSO, 2018, p. 8). Since 1974, the VSO has been working in Bangladesh with marginalised women and men, from low-income communities, to enable support and improve benefits from national social and economic development (VSO, 2019b). Work originally focused on farming communities to promote sustainable incomes but following the Rohingya refugee crisis, VSO developed various projects to ‘help Rohingya children get their childhoods back’ (Taylor, 2018).

***Technology***

Technology continues to transform teaching and learning both nationally and globally. Technological advancements serve to increase the digital divide between technology rich and poor contexts (Hernandez & Roberts, 2018). Whilst acknowledging many complex challenges, increased access to electronic equipment, mobile phones and the Internet has the potential to develop educational opportunities across the globe (Lloyd & Barreneche, 2014). In high income countries, educational technology is embedded in society encouraging heutagogy and making learning transformative (DfE, 2019). Virtual learning environments are commonplace within educational establishments, enabling easy access to resources and consequently increased opportunities for independent learning and knowledge growth. However, how educational technology is implemented in global societies is contentious, with many being highly critical of individuals and organisations developing projects in technology-poor contexts without due regard to the individual country or context and without the participation and agency of key stakeholders in communities (Selwyn, 2013; Lloyd & Barreneche, 2014).

***Mapping Educational Specialist Knowhow***

The MESH initiative embraces the concept of translational research, systematically applying research to practice and thereby bridging the theory to practice divide. Translational research is a well-established practice within the health sector and the MESH project strives to develop the concept within education, to provide teachers with access to research that informs their professional practice in the classroom and beyond (Burden, Younie, & Leask, 2013; Younie, et al., 2019). The MESH initiative is a long-term, continuously evolving, collaborative tool (service and product) that uses digital technologies to improve the global issue of educators sharing and updating subject and pedagogic knowledge. MESHGuides are aimed at teachers and educators; anyone with internet access has access to a dynamic evidence-base for practice which summarises research on subject content knowledge and pedagogy. Guerriero (2017) highlights how a lack of current pedagogic knowledge, and the theory-to-practice divide, impacts on the quality of teaching. MESH provides a sustainable system using research and resources already in the education sector to generate and update evidence-based summaries. All guides are free and easily accessible online through the use of graphical flowcharts *[Figure 1 near here].*

MESHGuides are systematically peer reviewed by educational professionals to ensure rigorous quality assurance procedures, similar to that of academic journal articles (Jones, Procter, & Younie, 2015). The Education Futures Collaboration charity provides MESH governance. The MESH system was founded by international educators (Leask, Procter and Younie) and strives to ‘support the UN’s SDG 4 by:

* *providing teachers and other educators with quick access to summaries of specialist knowledge, based on research, to support their professional judgement.*
* *providing a place where teacher-research networks and academic researchers are able to disseminate their research in forms accessible to practitioners, teacher educators and policy makers*
* *providing a means for identifying research questions that teachers and other educators want answered and communicating this with researchers*
* *signposting current research and gaps in the research base so as to help avoid duplication and invite critical scrutiny of current research*’ (MESH, p. 2019a).

**The ECEE Translational Research Process: Research in Action through Partnership Working**

During the policy dialogue forum of the UNESCO International Task Force, Teachers for Education 2030, VSO and MESH founders collaborated to address SDG 4. The two non-governmental organisations embarked on a partnership to promote early childhood education in the Rohingya refugee camps of Bangladesh. The journey to translate research on early childhood education into practice evolved and comprised of six distinct stages [Figure 2 near here].

At stage one, the ECEE MESHGuide was created. The guide includes an in-depth online repository of documents related to diverse themes within the field of early childhood [see Figure 1]. This MESHGuide aimed to support the development of subject and pedagogical knowledge and consequently the practice of VSO volunteers working to promote the education of young Rohingya refugee children living in Cox’s Bazar.

The VSO Bangladesh team developed an initiative to promote learning for children aged 3-5 years old. The aim was to ensure well planned, naturalistic play-based education was provided through a sustainable home-based learning programme, led by community volunteers within their own tented homes. MESH Early Years specialists and VSO international volunteer education specialists (IVES) developed a Family Booklet from the ECEE MESHGuide (Stage 2). This booklet summarised key information from the MESHGuide including content related to play, child development, managing trauma and practical ideas for activities using local sustainable resources. The Family Booklet was translated into local languages and was used to support the training of national and community volunteers in educational concepts. The training aimed to support long term change in attitudes to play by engendering the promotion of a playful pedagogy.

The ECEE MESHGuide was employed at stage three to support VSO in developing a set of resources that were accessible on a tablet device. Children’s activities, in digital format, were uploaded to a VSO School Mobile application developed using the Ustad mobile learning management system. The potential of the application as an additional tool was real; it was low cost and accessible *without* Wi-Fi and Internet connectivity (Al Kabir, 2019). This was vital as the camp lacked the necessary infrastructure to support technological applications. During the application development stage, while MESH specialists and VSO technical experts provided inputs, field staff and volunteers collaborated with local communities to ensure content developed was culturally appropriate. This cycle of continuous feedback ensured all learning activities were available, age appropriate and sufficiently engaging. The application content included:

* Burmese and Rohingya songs/rhymes
* Health and hygiene practices e.g. hand washing procedures, washing clothes
* Safety & security awareness e.g. stranger danger and road safety
* Thinking skills games e.g. shape puzzles, sequencing
* Local resource making ideas
* Local story telling videos

At stage 4, the relational volunteer model used by VSO Bangladesh came into operation [Figure 3 near here]. Two VSO international volunteer education specialists (IVES), provided training for five national volunteers (Stage 5). The national volunteers then provided two days of training for fifty community volunteers (mothers/big sisters). Training involved: group work to explore educational concepts, ideas and planning for effective play; demonstrations where mothers/big sisters delivered group micro-teaches of their own planned activities; peer-to-peer support where groups assessed micro-teachings and gave constructive feedback. Community volunteers used the mobile application via tablet devices during training and for the following eight weeks. They had access twice a week, for one hour to familiarise themselves with play-based practice content. The ECEE MESHGuide helped VSO address their objective, ‘training will help mothers/big sisters enrich children’s learning experiences hence securing children’s right to quality education’ (VSO, 2019c) and meet the challenge of SDG4 and SDG5 by providing opportunities for mothers/big sisters to overcome gender inequalities by leading educational practice change in the community.

The final stage in the translational research process was realised as the fifty mothers and big-sisters each provided play-based learning opportunities within their own tented home environments in the camp (Stage 6). Three, two-hour sessions a day, were offered six days a week, with ten different children attending each session. Therefore, across the fifty settings, a total of 1,500 children were accessing planned play-based learning experiences on a regular basis [Figure 2].

**Methodology**

The research design adopted for this case study (Yin, 2014) was one of co-construction/co-creation. The approach of co-construction/co-creation has previously been a strategy used to enhance marketing practises (Lombardo & Cabiddu, 2017), but literature shows that it is now being applied to other fields (Horner, 2016). Horner (2016, p. 8) clarifies the meaning of co-construction/co-creation noting that as:

a basic definition: co-constructed research…. facilitates equal partnership in research between at least one academic party and one non-academic party (for example, a community organisation, charity, museum, or public sector organisation) over all phases and aspects of the research from research design, analysis and output.

For this approach to be successful, Horner (2016) stresses the importance of building meaningful and trustworthy relationships between the different parties involved. As the

project has developed the continued relationship between academics and the VSO has been of paramount importance. Ind and Coates (2013) also note mutuality of relationships where organisations jointly develop meaning and would view this as a change in thinking from the industrial age mind-set to the human engagement mindset. Lombardo and Cabiddu (2017) explain that productive co-creation needs input from different participants so as to maximise different types of skill and capital. Using a co-construction model enables a wide range of expertise to be drawn on to help to understand the localised context and different social, economic and structural challenges presented in this research.

The study used a mixed methods approach to investigate effectiveness of the transfer of research-informed knowledge [Figure 1]. Successive stages [Figure 2] from the starting point, the ECEE MESHGuide research-informed content, through to purposeful children’s play in refugee home environments were evaluated. Multiple data collection methods were used by MESH researchers and VSO staff to gain both qualitative and quantitative data.

 Triangulation was ensured by using a variety of sources, strengthening the chain of evidence and providing explicit links between questions, the data collected and conclusions made, therefore, also increasing opportunities to yield rich data (Yin, 2014). Data collection tools used were observations, questionnaires, interviews, document analysis of VSO reports and focus groups. MESH researchers also collected independent empirical data, selecting unstructured interviews to gain perspectives of two VSO international specialist volunteers who led ‘train-the-trainer 1’ sessions [Figure 2]. The focused interviews enabled researchers to gain perspectives from key volunteers in the field who had various first-hand perspectives from accessing the main ECEE MESHGuide online, to using the booklet in the camp when training national volunteers and observing train the trainer 2 input and play sessions in the home. Specific questions relating to use of the guide enabled more in-depth data from the ground to be collected.

The technique of non-probability sampling, specifically convenience sampling and purposive-revelatory sampling, was selected *[Table 1 near here]* for a number of reasons. Non-probability sampling, commonly used for case study research allows for targeted representation (Cohen, Manion , & Morrison, 2018). In this case study, the technique also provided a vital inductive approach, various stakeholders involved in the project at different stages could be identified and included as appropriate. Revelatory sampling was used to gain unique, previously unresearched, insights from varied stakeholders about the home-based learning programme (Yin, 2014). Phillips recognises the importance of emergent behaviours in research carried out in emergency contexts to increase ‘the chance of securing data from informative participants’ (2014, p. 542). Convenience sampling occurred once and was necessary because only one of the two international volunteers was available.

The data collected in this study was gained in line with ethical procedures. MESH researchers followed BERA (2018) guidelines; informed consent was requested from participants when being interviewed. Participation was voluntary, names were anonymised throughout and all data received kept securely with issues of confidentiality considered (BERA, 2018). Data collection methods used by VSO staff also observed ethical procedures of informed consent, confidentiality and minimisation of risk and harm, the team followed the Child Protection Policy of VSO Bangladesh (Ahsan, 2019a). The global VSO policy ensures that all employees and volunteers are inducted in safeguarding standards and stipulates that it has a responsibility to maintain reasonable safeguarding measures to ensure, as far as possible, the safety and protection of children. (VSO, 2018a)

**Findings**

This section is organised in stages (as shown in the bulleted list below and further detailed in Figure 2) to capture the different stakeholder perspectives:

1. MESHGuide
2. Family Booklet
3. Mobile application
4. Train the Trainer 1
5. Train the Trainer 2
6. Home Learning

 Key findings from the stages showed that tented homes can provide a safe place for playful learning to occur on a regular basis, the building and maintaining of positive relationships was found to be vital in enabling effective collaborative working between stakeholders, benefits to both marginalised women and children in the community were evident. The MESHGuide was pivotal as a starting point that enabled other stages of the project to emerge.

***Stage 1: ECEE MESHGuide***

The MESH project Annual Report (Leask & Younie, 2018) shows the global potential and significance of the MESHGuide project for the mobilisation of research knowledge for educators to use in education settings, whether school-based or in emergency contexts. The annual report, an audit requirement of the EFC Charity governance processes, records that during the year 2017-2018 the complete collection of guides was accessed by over 193 countries, achieved 42,570 plus users and 1.275 million-page views. Numerical data shows the ECEE MESHGuide had less use internationally with most hits originating from countries where English is the first language. Data reveals that between March 2018-March 2019, 83% of hits were from the USA and GB (MESH Guide Analytics, 2019).

MESH (2019b) states that one important benefit of the ECEE MESHGuide is how, ‘it puts ownership of learning back into families and communities as well as formal centres of learning’*.* Additionally, the MESH cofounders advocate the flexibility of the guide suggesting that it could be used internationally as a rapid response to need as it arises (ibid). This would include the unexpected global crisis created by the Covid-19 pandemic, where formal schooling structures are radically disrupted.

To enable greater community accessibility to the research-based knowledge contained in the digital ECEE MESHGuide, appropriate material was selected and applied to a hard copy resource called the Family Booklet. This was for use by volunteers working within the refugee camp. The adaptability of the ECEE MESHGuide is explored at each stage of the process.

***Stage 2: Family Booklet***

Collaboration between VSO volunteers and MESH occurred when VSO IVEs suggested key areas most appropriate to introduce during Stage 3: Train the Trainer 1. Key information from the ECEE online guide was identified and summarised by the MESH team to create a user-friendly, paper-based guide (Family Booklet). The aim was to make the ECEE MESHGuide manageable for field-volunteer trainers and mothers/big sisters in terms of new concepts to support long term change in attitudes to play and promotion of a playful pedagogy.

The required information was readily available on the ECEE digital guide and easy to adapt from the innovative online knowledge mapping approach. MESH colleagues used the mapping to capture personalised context-specific, research-based advice in a timely manner. The Family Booklet was used in training by IVEs to extend and deepen knowledge and understanding of child development and appropriate pedagogic interventions in crisis settings education. The booklet provided a foundation tool for training to build on and gave a resource for trainers and volunteers to refer back to. This was particularly useful as trainers were expected to take on a significant amount of new information and concepts over a day.

A final evaluation of the effectiveness of the relational volunteering model [Figure 3] within the camp concluded that,‘The MESHGuide/family booklet was effectively used in the EiE (Education in Emergencies) situation in Bangladesh and it seems to bring positive outcomes’ (Ahsan, 2019a, p. 52)*.*

***Stage 3: VSO School Mobile Application***

VSO volunteers including all 50 mothers/big sisters were able to access the activities on the mobile app during training. Then for short periods of time, over eight weeks, they used the tablet devices to familiarise themselves with the research-informed content. However, mothers/big sisters were unable to use the app technology within the home learning environments as VSO were awaiting the required Government approval and permission from the Bangladesh Ministry.

A mobile app feedback survey showed that 100% of mothers/big sisters held positive feelings about using the technology themselves and were keen to use the app with children (Al Kabir, 2019). Furthermore, 60% of mothers/big sisters found the tablet useful in understanding how to use a variety of materials (fabrics dolls, bottle tops) to help children learn. 20% felt it helped them to use local materials to make sustainable resources and a further 20% felt the application helped them to teach. When asked what they thought the children would learn from using the tablet resources, 66% of the mothers/big sisters identified different types of games, rhymes/poems, stories and exercise activities. 33% of the participants said children would improve their thinking skills. However, only 2% said the tablets could be used to help children learn through play (ibid).

The locally based Project Manager identified the following challenges related to the application training (Akhter & Al Kabir, 2019):

* The camp is often noisy and the app sound quality could not compensate effectively.
* The content needed to be simpler than expected due to the knowledge and skills of the mothers/big sisters.
* Developing the content was time consuming as developers needed to upskill in relation to knowledge and understanding of effective practice in Early Childhood Education.
* The Burmese language translation was a lengthy process.

An overall project evaluation highlighted areas of child development that could be promoted by children using the app, ‘ICT requires many precision movements. Therefore, children will develop fine motor skills to accurately control the tablet; tapping and dragging on screen to select or highlight items’ (Akhter & Al Kabir, 2019, pp. 18-19).

***Stage 4: Train the Trainer 1***

An IVE reported challenges related to spoken language when training. The IVE leading the training was English speaking and national volunteers spoke Bengali as their first language. The IVE explained that one of the national volunteers who had a good understanding of English translated from English to Bengali and then national volunteers shared language in varied dialects of Bengali and Burmese to ensure all volunteers could access and understand the training content. In an interview the IVE explained how this had impacted both on the pace, content and fluency of the training ‘posing the potential for dilution of key information from the Family Booklet’.

The IVEs considered the Family Booklet to be a good starting point that was useful alongside additional practical ideas and physical resources. One IVE reported that an additional training booklet, for national volunteers, with wider content than the Family Booklet would be beneficial to allow them to have more information to use and refer back to when supporting mothers/big sisters. The IVE explained how useful the booklet was alongside video clips, which highlighted effective play pedagogies within similar contexts. The clips enabled national volunteers to gain knowledge and understanding of the key concepts being shared by viewing practice-in-action. This combined approach provided a strong case for the value of play. The IVE felt that more videos to demonstrate play resources in action would improve the training experience e.g. demonstrating the learning potential of play with blocks made from locally sourced bamboo. She also felt there was a need for more resources e.g. Family Booklet to be translated into more local languages. Materials are developed in both Burmese and English languages, both of which are considered foreign languages to most in the camp, including the national and community field-volunteers (Ahsan, 2019a).

***Stage 5: Train the Trainer 2***

The VSO relational volunteering model [Figure 3] promoted participation of varied stakeholders including community volunteers and mothers/big sisters. Most were intrinsically motivated to train to teach, they were interested and wanted to do ‘something good for the children’ (Ahsan, 2019a). Mothers/big sisters explained that they were keen to participate to enable children to learn and develop in a safe environment provided by the homes. Mothers/big sisters were in a good position to engage parents and refugee community leaders. VSO claim ‘the participation of different stakeholders was ensured through the volunteers which helped to blend ‘outside’ and ‘inside’ knowledge for implementing ECEE in the camp’ (Shrestha & Thaiprasert, 2019). Furthermore, the national volunteer explained how the relational model was working in practice

Mothers/big sisters are sharing their feedback to community volunteers; they are sharing those to national volunteers and then national volunteer are reaching those messages to the international volunteer. On the other hand, the voice of international volunteer is reaching to big sisters through the cycles of volunteer. Basically, we are working through mixing up the top-down and bottom up approaches (Ahsan, 2019a, p. 18).

During the training, mothers/big sisters were active participants who sustained interest (VSO, 2019c). Peer-to-peer support and micro-teaching opportunities, where mothers/big sisters had the chance to observe and critique each other’s practice, were found to be constructive. Ahsan (2019a) explains how mothers/big sisters received training to use lesson plans for their micro-teaching activities that incorporated thinking skills and creative techniques as well as introducing topics to encourage roleplay and promote independence in self-care. In addition, 9/10 of the mothers/big sisters followed lesson plans that had been shared during training. To ensure mothers/big sisters are supported in the longer term and continue gaining knowledge and skills, a training and orientation facility has been made available on a monthly basis. One participant said ‘I got to know this from training that we can’t scold or beat children’.

***Stage 6: Home Learning in an emergency setting***

The 50 mothers/big sisters use their own homes as early childhood education centres. For six days a week, each tented home provides two hours of education, three times a day for x10 children in each session (x30 per day). In total, 1,500 children receive early learning experiences. 98% of parents are satisfied with the cleanliness, location and safety of the homebased centres and over 90% of parents are satisfied that mothers/big sisters have suitable qualifications to teach the children (Akhter & Al Kabir, 2019). OCHA (2019a) report that the percentage of 3-14 years old without access to education in Cox’s Bazar reduced to 16.11% in December 2019 and cite home-based learning programmes as one of the interventions that helped to achieve this reduction.

The VSO training report (2019c) details how the ECEE MESHGuide helped to implement ‘best’ child care practices in home-based-centres. In this environment, observations from researchers recorded how children participated actively in the classes (Ahsan, 2019a). Ahsan explains that mothers/big sisters used recycled materials creatively to provide age appropriate resources for engaging learning. The 50 mothers/big sisters recognised how the playful application of sustainable resources helped to stimulate imagination, creativity, fine and gross motor skills, social and emotional development and benefitted the language and literacy of young children (ibid). The report also highlighted that ‘most parents and teachers have positive opinions regarding children’s learning and behavioural changes that came through homebased ECCE’ (Ahsan, 2019b, p. 3)*.*

Document analysis of VSO data shows parents and mothers/big sisters felt children had made progress across four areas of development (social and emotional, language, physical, intellectual) (Ahsan, 2019a; Shrestha & Thaiprasert, 2019; VSO, 2019d). For example, and 90% of mothers/ big sisters and 98% of parents agree that children were able to recite a poem as a result of the intervention. However, without evidence of an initial baseline assessment, there is a lack of comparable data to corroborate the evidence at this time. A specific early childhood curriculum and assessment tool has not been developed to support the ECEE work in the crisis setting. Consequently, concrete data that shows children’s progress is unavailable. However, there is an opportunity to create an innovative tool for assessment to enable progression data to be gathered.

MESH (2019b) collated the voices of varied stakeholders:

‘I’ve learnt so much about aspects of education I haven’t thought of before and about how to help the learning of my grandchildren.’ [grandmother]

‘I have changed the way I teach young children.’ [community volunteer]

‘It has made me more aware of the importance of families in supporting education in the early years.’ [practitioner]

One IVE identified the emotional impact of the ECEE intervention project on children: ‘Initially, the children were fearful or anxious when we interacted with them... Our home visits were characterised by screams… Now, these children have the chance to sing joyfully, recite poems, and take part in other activities…Above all, these children feel a sense of belonging.’

From these findings, the following themes were identified and are analysed in the discussion:

* The Education of Young Refugees
* The importance of a shared vision: Mesh and VSO Collaboration
* Effectiveness of the ECEE MESHGuide and VSO Local Initiatives
* Empowerment of Marginalised Children

**Discussion**

***The Education of Young Refugees***

Using home-learning environments as ECEE centres with appropriate resources, is an innovative concept that addresses the shortage of general space in the refugee camp and most certainly in providing safe places to be. Providing three sessions per day maximised the use of the home learning environments, as the spaces created educated 1,500 young girls and boys in the camp on a daily basis. The project supported the overall increase in the number of children accessing education in Cox’s Bazar. As cited earlier (UNESCO, 2016; Cerna, 2019), refugee children are often unable to access education and parents may not send their children to school for fears over safety and because children are carrying out necessary household chores. The rights of these children were being met through the home-based learning programme, not only in terms of accessing education but also relevant, article 31: the right to relax and play (United Nations, 1989).

The relational model and specifically using volunteers from the community was extremely effective, volunteers were able to encourage local families to send their young children to them for the home-based learning sessions. Volunteers were trusted and familiar figures and parents were satisfied that they had the skills to teach their children. Engaging parents in their children’s education from such an early age is important and it could enable parents to actively seek out and encourage their children to access future learning opportunities (UNHCR, 2019). Gaining an education is key in overcoming the cycle of poverty, although 50% of pre-primary and primary Rohingya refugee learners in Bangladesh still lack access to quality learning opportunities (OCHA, 2019a). This figure suggests that there is a need to upscale the concept of this successful project using the Relational Volunteering Model and home learning environments elsewhere in Cox’s Bazar and beyond.

***The importance of a shared vision: Mesh and VSO Collaboration***

The UNESCO International Teacher Task Force Policy Dialogue (held in Togo, 2017) led to a sustained and effective collaborative partnership between MESH and VSO representatives. Together, research on early childhood education was translated through the series of stages previously described [Figure 2]. Both MESH and VSO are non-profit making organisations and use interested parties to volunteer their services. This commonality is significant, providing an immediate advantage point. Not-for-profit organisations regularly develop partnerships to share and secure resources and expertise to maximise potential for impact (Proulx, Hager, & Klein, 2014). Whilst acknowledging their differences, both organisations have aims that enabled a clear shared vision. The MESH vision centres on education by ‘supporting teacher professional judgement with evidence from the science of learning’ and ‘connecting educators, sharing evidence to improve outcomes and practice, improving life chances for learners globally’ (Leask & Younie, 2018)to address SDG4. With a vision of ‘a fair world for everyone’, the VSO work to ‘bring people together to address marginalisation and poverty’ (VSO, 2019a, p. 8). VSO cite the role of education as a strategy towards realising their aims ‘when teachers pass on their skills to others, when community groups are shown reliable sources of income, and when governments are helped to make systems fairer, this brings about lasting change’(ibid.).

From these stand points, a clear shared understanding is evident; education for all is essential and a powerful agent to enabling local and global change. Furthermore, both organisations state their commitment to the SDGs generally and specifically to SDG 4 (UNESCO, 2015). The shared commitment to SDG 4, provided a secure foundation for trust to be fostered and motivated both parties as mutual advantages were obvious. Huxham and Vangen (2005) suggest trust is established and maintained as a cyclical process. As one expectation is met through the agreed actions of each party so the trust is reinforced. The continual evolvement of the partnership and it’s operationalisation, was a cyclical process. At various stages MESH early childhood experts tailored support to meet the needs of the refugee community based on specific context detail and need provided by the VSO team working in the field. Such communication and refinement was vital in ensuring resources and ideas were relevant and accessible to the target community. Trust and commitment by both parties enabled continuous collaboration and success at each stage.

***Effectiveness of the ECEE MESHGuide and VSO Local Initiatives***

The ECEE MESHGuide, freely available on the MESH website, has been accessed by a non-targeted audience; largely from UK and USA (83%). This shows that not only is there a demand, but the guide has potential for greater use by English speaking stakeholders including teachers, early years practitioners and parents. In the UK there is an ongoing need to upskill the early years sector where levels of qualification vary enormously from unqualified to Early Years Teachers who hold degrees (DfE, 2017). The UK Government recognises challenges within the workforce and claims to be ‘committed to supporting the development of a well-qualified workforce with the appropriate knowledge, skills and experience to deliver high quality early education and childcare for children from birth to age five’ (DfE, 2017, p. 4). One strategy the DfE commit to is ‘improving the quality of early years training and providing access to continuous professional development’ (DfE, 2017, p. 5). These UK Government commitments create the opportunity for MESHGuides to support the Government delivering on its pledge.

As highlighted, the online ECEE MESHGuide had minimal hits from the case study location of Cox’s Bazar. The reason for this limited uptake is straightforward and unsurprising. In addition to the lack of internet access, the guide was inaccessible to the majority of the target audience because of the language barrier and limited literacy capabilities. The complex nature of many uploaded documents and the sheer number of sources listed presented a consequential challenge. The VSO IVEs did access the guide and recognised the wealth of informative material available to them. What the specialists needed at this time was support in negotiating the gap between knowledge and the local context (UNESCO, 2015). This gap was highlighted to MESH colleagues and the collaboration continued seamlessly onto stage two.

VSO IVEs and MESH early years experts created a suitable, paper based, context relevant family booklet. This initiative was successful in breaking down information for national and community volunteers. The translation of the family booklet into Bengali and Burmese was of pivotal importance, it enabled greater access and therefore increased use in the home learning environments. The language barrier noted by IVEs when training national volunteers is a recognised issue in Cox’s Bazar. Only 31% of Rohingya people feel that aid workers use a language they understand (OCHA, 2019b). The use of translators ensured that learning during training was accessible for field-volunteers to be up skilled in early years education but there was an impact on the quality of the experience. The IVEs found it a real challenge and it could be assumed that such thoughts were reflected by national volunteers.

In their joint response plan for the Rohingya humanitarian crisis, OCHA (2019b, p. 47) claim ‘there is a significant gap in communication means and an over-reliance on top-down communication through single channels’. The VSO Relational Volunteering Model [Figure 3] was highly effective in engaging a diverse range of community stakeholders and enabling communication at all levels. A hierarchy did not appear to overtly exist and the model seemed to prevent significant communication gaps arising. The model engaged the community and enabled mothers/big sisters to come forward to become volunteers. The national volunteers were pivotal in involving families in their own tented areas. Ultimately parents felt reassured by national and community volunteers, they believed their children would both be safe to attend the home-learning environment sessions and that the sessions would be beneficial to their child’s education. The relational model enabled tiers of volunteers to come forward, mobilise effectively and gain the necessary knowledge and confidence to teach others. This stage had a direct positive impact on the experiences and outcomes of very young Rohingya Refugee children. The success of the VSO relational model, used in conjunction with the MESHGuide, suggests that it has wider use within the field of translational research for teachers and researchers working in crisis settings.

Through the home-learning experiences children developed a sense of belonging, they felt safe and secure in these spaces, directly promoting positive dispositions to learning and demonstrating how the mothers/big sisters had been able to create safe spaces to play and learn (Bakali & Watsy, 2020; UNHCR, 2019). Feeling safe and secure should not be underestimated, as cited children are likely to have suffered trauma before arrival at the camp and stress continues within their daily lives in Cox’s Bazar. Engaging in playful opportunities enabled children to relax, enjoy and achieve (Shrestha & Thaiprasert, 2019).

Although the mobile application (supplying downloaded digital reading resources) was not used in the home learning environments, the ECEE MESHGuide can be evaluated in relation to providing the app contents, how it strengthened the educational systems (UNESCO, 2015) and ensured the involvement of these from a ‘technology poor’ region (Selwyn, 2013). IT specialists used the ECEE MESHGuide to source suitable materials for the app, and through the guide, the project manager was able to identify and explain the learning potential behind the app activities. The guide can therefore be seen as influential at this stage demonstrating how the collaboration continued to be effective. Being unable to use the app in the camp could have been advantageous to the children who engaged in first hand play experiences with an adult support who had carefully planned the experience rather than learning from an electronic devise. The app had been extremely useful for mothers/big sisters to make links to their training and reinforce knowledge and understanding for the eight weeks it was available to them alongside the Family Booklet. This is likely to have made them more effective in their teaching roles and from the comments previously seen gave them an understanding of the value of play.

Overall, the ECEE MESHGuide represented a set of research-based education resources for a learning intervention that enhanced carefully planned initiatives by VSO within the camp. These local initiatives had the greatest impact, as shown in the findings section, but without the ECEE MESHGuide and subsequent family booklet it could be argued that trainers would have been less well-informed and unable to review training content at a later date. Without the booklet, the impact of the overall project could have been less significant.

***Empowerment of Marginalised Children***

Approximately 53% of the Rohingya refugee population is composed of women and girls, many of whom have reported systematic rape and sexual violence by Myanmar forces (OCHA, 2019b). Within the tented community women and girls continue to be marginalised due to pre-existing gender inequalities and restrictions placed on their mobility, which directly impact on access to support and opportunity (ibid). The VSO relational volunteering model was designed to help combat these issues and promote SDG5, ‘to achieve gender equality and empower all women and girls’ (United Nations, 2015)*.*

The relational volunteering model has empowered mothers/big sisters to lead early education sessions in their own homes. Using their own homes as spaces for learning provided mothers/big sisters with ownership of the intervention project, the training provided confidence and the women subsequently had a purposeful and rewarding role and voice within the community. Gaining a voice promoted agency, advocacy and social change. One IVE provides an example ‘Some developed their own teaching resources using locally sourced materials, like writing numbers on food cartons using lipstick. The mothers/big sisters took pride in their environment, they decorated them and worked hard to maintain safety standards to ensure a safe space for children to play and learn (Ahsan, 2019a). The mothers/big sisters were inspired to implement newly gained pedagogic knowledge through to practice (Guerriero, 2017). They were eager to provide learning through play and endeavoured to prepare sessions that engaged children in challenging situations. Resources were generally insufficient, and in terms of quality, very limited. Although training enabled volunteers to create low/no cost resources, there is a need for further work to support volunteers in being able to generate these to further improve the quality of the learning experiences for children.

**Recommendations**

***ECEE MESHGuide***

Research data to date has demonstrated that the ECEE MESHGuide has potential both nationally and internationally. To further develop the effectiveness of the guide and its impact on training and subsequent learning experiences within tented homes, several features need to be developed. The ECEE MESHGuide has been recognised as beneficial as a starting point (stage 1), but there are greater opportunities that are not being realised from the online repository itself. A scaled down version of the ECEE MESHGuide is required that better promotes effective translational research to all trainers. This will include a more dynamic interface that meets the evolving needs of a range of global communities working to enhance learning opportunities for very young children in crisis settings, such as a refugee community or global pandemic. In the case of the latter and the global coronavirus pandemic for example, countries are suddenly home-schooling and need access to research-informed education resources using the Internet.

The MESH early years team (researchers and educators) are working on a new enhanced global guide, which will include less detailed documentation and more practical ideas and resources, video clips and texts. Most significantly, materials need to be easily translatable to home languages relevant to specific contexts and countries. Further practical ideas for sustainable locally made low/no cost resources need to be provided that are context specific so that volunteers can develop banks of play materials to enhance activities and stimulate children to enjoy learning through play and be encouraged to engage in sustained-shared thinking. The collaboration with VSO needs to continue to support such developments; experts working in the field have much to offer and ensure work by MESH is relevant and accessible. Continued use of MESH mapping will allow for easy accessibility to the relevant information in any redesign.

***Creation and Translation of a Trainer Booklet***

The translation of texts and videos into home languages spoken by communities is of key importance in enabling volunteer educators access to a wider range of knowledge and understanding. The family booklet needs to be translated accordingly and uploaded to devices that mothers/big sisters have access to as well as being provided with a hard copy to own. In order to better prepare national volunteers, it is recommended that MESH and VSO collaborate to create a ‘Trainer Booklet’ that has more information on topics included in the family booklet and subsequently greater scope for sharing knowledge, understanding and effective/good practice in early childhood education and development.

***VSO School Mobile Application***

The mobile application appears to have potential benefits to supplement the training and engage children in the home learning spaces. Trainers were excited by the technology and it is suggested that children will have similar positive attitudes. With the development of the ECEE MESHGuide outlined above, it should be easier to transfer activities and clips across to the application. Partnership with VSO again is critical to the verification of appropriate resources for use in crisis settings and providing continuous feedback to MESH colleagues. Video footage of effective pedagogic practice in home learning environments captured by VSO can enable a two way process of sharing resources. These clips can be uploaded to the newly created ECEE MESHGuide for access by all.

***Child’s Voice***

Eighteen Rohingya children took part in three focus group discussions and children were observed during sessions in the home learning environments, however, their voice has not been heard in evaluations. Going forward greater emphasis should be placed on the thoughts and perceptions of the child and these should be more evident in project evaluations. This is in line with article 12 of the United Nations Convention on the Rights of the Child which states that all children with the capacity to form views have ‘the right to express those views freely in all matters affecting the child, the views of the child being given due weight in accordance with the age and maturity of the child’ (United Nations, 1989, p. 5).

***Curriculum Framework and Assessment Tool***

To improve the delivery of early childhood education it would be pertinent to design a clear and simple, user-friendly curriculum framework. This would set out a standard of expectations for mothers/big sisters and ensure children learn and develop appropriately in the context and have the skills to transition to school. Developing an effective assessment tool will allow for progress to be monitored from baseline onwards and would allow organisations such as the VSO to evaluate areas of their work more effectively and recognise impact even more reliably. This early intervention project has enabled educators to set a minimum standard that is achievable in a crisis setting, with little or no resources, and begin a learning programme for refugee children. From here, a plan to enhance and improve education provision can be made. This project has been significant in moving from zero to a baseline start; young refugee children can now engage in some structured learning, promoting SDG4 and SDG 5.

***United Kingdom Developments***

As discussed, the current ECEE MESHGuide is more appropriate for the English-speaking global north and the guide needs reviewing and relabelling in light of this. It is recommended that this page is separate to the ECEE MESHGuide but both pages carry clear signposting so users can access both as appropriate to individual and context need. Further analysis of the google analytics data is required along with a data collection exercise with the early years workforce within the UK to ensure changes made meet needs appropriately. This data will enable improvements of page signposting and content and could lead to a suite of Early Years MESHGuides being developed that allow ease of access for a diverse group of stakeholders from different countries and contexts. Initially, a focus to support and improve translational research within Bangladesh and England is planned, such developments are likely to allow wider accessibility and a global use increase.

**Conclusion**

The case study evidenced translational research in action. Findings show that the MESHGuide was effective in developing early childhood education practices in a crisis setting. Significant impact is illustrated by the voices of various stakeholders and in particular the national volunteer quoted previously who commented on the change in children’s behaviour from withdrawn to actively engaged in learning sessions. The MESHGuide also had an unexpected impact on English speaking global north countries who used the guide for professional development.

The most important element of the project was the collaboration with the VSO who ensured the MESHGuide research was translated, through context specific stages, to practice with refugees in the camp. The translational research model and VSO relational volunteering model complemented each other and reinforced a shared vision and enabled both parties to address SDG4 and SDG5. As experts in the field, the VSO were able to lead educational change whilst gaining expert early years support from MESH collaborators. The continued success of this relationship is vital in the future development of improved MESHGuides and developing more sustainable, language relevant resources for VSO volunteers to use in crisis settings.

The ECEE MESHGuide has not yet achieved its full potential. Implementing the recommendations within this paper and continuing to monitor and evaluate the effectiveness of the MESHGuide and related resources will improve usage and consequentially children’s learning experiences and outcomes. Views of all stakeholders should be consistently sought and listened to so that guides effectively meet the needs of various communities and improve early childhood education.

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