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Multilingualism, Multimodality, and Gamification: Pathways to Democratising Educational Spaces

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What This Chapter Is All About

In this chapter, democratisation of educational spaces means that we welcome non-standard entrants into professional roles in education. Teaching and designing learning can be done by people without the usual (post)graduate pedagogical qualifications. Educational research can be done by people who do not have PhD degrees and formal training in research methods. But how do we go about opening up educational spaces and pushing these boundaries? What about legitimacy, accreditation and rigour? To engage with such questions, it is enlightening to look at the periphery of educational systems because it is here that experimentation can thrive. We therefore take a tour to rural India to look at alternative learning pathways, covering both deaf education and education for sustainability. Here we find innovations that are enabled by a cast of supporting actors: multilingualism, multimodality, and gamification. I present examples of educational settings with several languages both signed and spoken used in different modalities such as writing, finger-spelling, and visual multimedia. In addition, gamification of learning also

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plays an important role in breaking down the usual power dynamics in teaching and learning.

Who I Am + My Key Intellectual Inspirators

I am a sign language linguist and designer of Serious Games for sustainability and regeneration. In theory, there is a great disparity between my personal background and my area of work: I am a white hearing academic from Europe working with deaf people and other local communities in India. However, in practice the gap is much narrower because I have spent over 25 years in close contact with deaf communities and with the Indian Subcontinent. I am fluent in Indian Sign Language, Hindi, and (to a lesser extent) in Sambalpuri, the most widely spoken language in western Odisha. Leading the International Institute for Sign Languages and Deaf Studies in the UK since 2006, I have been in close contact with deaf people from all around the world both professionally and privately, and I am married to a deaf Indian. At our base on the Shikha Eco-Learning Village campus in rural Odisha we look after agroecological experiments and the co-located Happy Hands School for the Deaf.

I came to sign languages purely from the point of view of a linguist, being fascinated by the aesthetics of signing and the three-dimensional grammar. For the first few years of my research, I never realised that deaf people were supposedly vulnerable, problem cases for literacy, employability and life chances, to be “fixed” if possible and made to join the so-called mainstream. This initial lack of any agenda has shaped my perspective. Moreover, instead of subscribing to any specific intellectual or theoretical framework, exploration and experimentation have been my guiding principles throughout my work trajectory.

Much of my inspiration for working on gamification and Serious Games design has a direct link with deaf communities. Features of game design such as sitting in a circle and using visual props instead of writing come directly from my experiences with elements of deaf culture. Over time, my work with gamification has broadened to include other contexts.

More recently, I have come to think of myself as a scholar-practitioner rather than purely an academic researcher. This has much to do with my roles in supporting teachers at the Happy Hands School for the Deaf and in developing games for sustainability. Besides my academic profile, I am co-director of Ishara Press CIC, a social enterprise publisher registered in the UK. Ishara Press operates a game design studio under its umbrella and

undertakes gamified multimedia publishing as well as publications on sign languages.

Central Concepts

- Multilingualism
- Multimodality
- Gamification
- Serious Games
- Peer-to-peer learning

Chapter Structure

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4. The effects of democratising educational spaces

1 Introduction

In this contribution, I explore questions of democratisation in educational spaces. Who can legitimately pursue educational research? Who is regarded as a bona fide educator with valid qualifications to teach or train others and to design learning? In order to push the boundaries of spaces that have been claimed by professionals in education, we take a detour via the education of deaf learners through sign language. What has happened in this area over the past decades raises challenges for other educational contexts and reveals pathways to the democratisation of education and learning beyond the traditional professional classes.

In this chapter, I argue for a strong interplay between multilingualism, multimodality and gamification. Under multilingualism, I also subsume bilingualism, as several contexts that illustrate the democratisation of educational spaces involve just two languages. I also understand multilingualism broadly to include different styles of the same language, in particular academic texts and texts with simplified language. Multimodality involves not only the main language modalities of spoken language and signed language,

but also various digital modalities as well as multimodal products (e.g. texts with embedded hyperlinks to media, or sign language videos with subtitles and pictures).

Multilingualism, multimodality, and gamification in their various creative combinations are powerful tools that enable people to break through traditional barriers in the field of education professionals. Starting from contexts of work with deaf sign language users, the application of these approaches to non-deaf contexts is then exemplified with a publishing initiative in the area of sustainability and regeneration, the Regen-D series. Regen-D, short for “Regenerative Design”, is a Serious Game format that uses gamification to bring the voice of sustainability and regeneration to audiences in a new way.

By definition, Serious Games are games that are played not merely for entertainment but for other “serious” purposes, such as learning, collaboration, or awareness raising. As playing a game means “acting as if” and is a step away from the real world, a particularly common type involves simulations (see Connolly et al., 2012). Digital games predominate in both simulations and other types of games, at least in the literature, where publications are often in journals that focus on digital technologies (e.g. Kebritchi & Hirumi, 2008; Lameris et al., 2017). The examples of gamification in this chapter involve both digital and non-digital elements.

Education and learning have been a very fruitful context in which to deploy Serious Games (e.g. Breuer & Bente, 2010; Squire & Jenkins, 2003). In addition, Serious Games are particularly useful in contexts of diversity where different cultures and/or communicative styles need to be bridged. Finally, Serious Games often rely heavily on visual game environments where game props are manipulated, whether by hand or digitally. Hence gamification and multimodality naturally go together well.

Section 3 presents some case studies where people without the traditional background and qualifications take on roles in research and education that they had previously been excluded from. These transgressions by non-standard entrants into privileged territory are marked by (at times subversive) playfulness rather than direct confrontation with established systems. This spirit is also reflected in the design of this chapter, which diverges from the standard conventions of a research article. It is a hybrid between academic writing and storytelling from an individual point of view. I trace the development lines of the reported initiatives like a play in three acts, where multilingualism, multimodality and gamification are part of the cast of characters. They are a trio of enabling actors that support the cast of human

characters in their efforts to claim entry to educational spaces. Like in a play, the setting is an essential component in this chapter.

Following the case studies, Sect. 4 suggests some of the wider effects that such democratisation processes may have on both “producers” and “recipients” of knowledge and education. To conclude the chapter, I argue that deaf spaces can act as frontrunners for innovative frameworks, which may profitably be extended to more mainstream educational spaces.

2 Two Contexts: Deaf learners and an Ecovillage

Two contexts are key for the initiatives that illustrate the main agenda in this chapter—pathways to democratising educational spaces. These contexts are represented in Fig. 1, within the red and the blue circles respectively. Teams and institutions are in normal font and individuals are in bold. Represented in green are two co-located sites in India; that is, the Happy Hands School for the Deaf is located on the campus of the Shikha Eco-Learning Village. The numbers in purple boxes serve to locate the three acts of the drama that will unfold in Sect. 3, namely the initial P2P pilot phase that took place in India (1), the subsequent P2P work with partners from several Global South countries (2), and the development of the Shikha Eco-Learning Village (3). Along with myself, Sibaji Panda is a central figure in all the initiatives reported here; hence the two of us are located in the overlap area between the two circles.

The first context (in the red circle) is thematically situated within sign language linguistics, deaf education, and Deaf Studies. Here I draw from several years of research and development that I led at the International Institute for Sign Languages and Deaf Studies (iSLanDS), which is based at the University of Lancashire in the UK (formerly the University of Central Lancashire). This work took place between 2015 and 2021 and focused on new approaches to the acquisition of literacy and multiliteracies with deaf learners in countries of the Global South. Central to the approach was the idea that deaf instructors should teach their deaf peers using sign languages as the medium of instruction. Sign languages are natural human languages that use the hands, facial expressions, and head/body postures for visual-gestural communication. A substantial number of sign languages around the world have been documented to date, with Hammarström et al. (2024) listing over 200 entries.

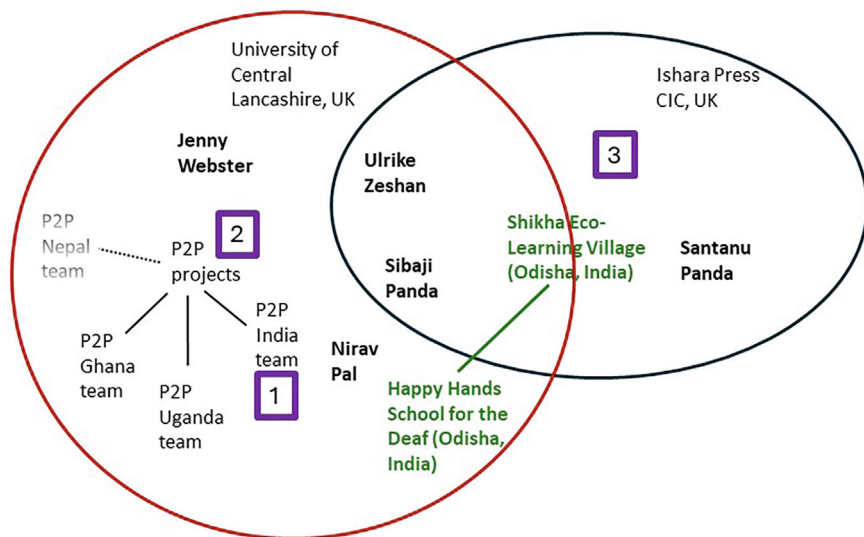


Fig. 1 Mapping the contexts

This work became known as the “Peer-to-Peer” projects, or P2P in short. The label P2P includes both “Peer-to-Peer Deaf Literacy” for the pilot with deaf adult learners in India (see Gillen et al., 2016), and “Peer-to-Peer Deaf Multiliteracies” for subsequent work with deaf adults and deaf primary school children in India, Ghana, and Uganda (see Webster & Zeshan, ; Papen & Gillen, 2022). The main sign languages involved in these projects have been Indian Sign Language, Ugandan Sign Language and Ghanaian Sign Language.

Besides myself as the Principal Investigator, some key people in the P2P projects are the following:

Dr Sibaji Panda worked as lead researcher in the Indian P2P team and is the director of the Happy Hands School for the Deaf, a residential primary school for deaf children that participated in the P2P programme. In addition, Sibaji is the founder of the Shikha Eco-Learning Village, an eco-campus in rural eastern India in the state of Odisha.

Nirav Pal initially worked as a peer tutor in the Indian P2P team, and subsequently became a P2P research assistant. He is currently a teacher at the Happy Hands School for the Deaf as well as the school’s assistant director and an active researcher.

Jenny Webster is a language support tutor¹ for deaf students and has been a research team member throughout the successive phases of the P2P projects, based at the University of Lancashire. She is also a certified British Sign Language interpreter and an active sign language researcher.

Figure 2 shows the “P2P” (Peer-to-Peer) sign used by the deaf field teams in all countries, which literally means “teaching each other”.² Initially, the research design focused on English literacy, but it soon became clear that multiple literacies are involved. In the classroom, reading and writing was integrated with sign language, drawing, acting or miming, and finger-spelling.³ In addition, the training and communication with our research teams also involved the multimedia use of ICT tools, especially WhatsApp and the virtual learning environment Moodle. These multiliteracies (see New London Group, 1996; Cope & Kalantzis, 2000) therefore became the focus of research.

The ICT environment was an integral part of this work. At the time of the P2P programme, internet access was variable but overall providing sufficient functionality in India, whereas the teams in Ghana and Uganda struggled with internet access in terms of both bandwidth and cost of data, particularly with respect to online meetings and sharing of video files. In India, smartphone penetration is also advanced, so that the majority of deaf adult



Fig. 2 The sign P2P: “teaching each other”

¹ In the UK, language support tutors work with deaf people, often students, to support them with English language access and skills. This may include translating texts into British Sign Language, simplifying English texts, correcting the student’s writing, explaining features of English such as grammar and text structure, and supporting reading comprehension.

² The field teams in each country of course used their own sign languages (Indian Sign Language, Ghanaian Sign Language and Ugandan Sign Language), but the P2P sign was used by everyone because it was invented in the course of the research.

³ Sign language users quote written words with a manual alphabet where each letter is signed in sequence. This is called fingerspelling and differs across sign languages; some manual alphabets are one-handed and some are two-handed.

learners had smartphone access. In Uganda, only a couple of deaf learners had smartphones. However, WhatsApp was much more accessible because it requires less data traffic, and almost all project staff in the three countries had their own smartphones.

The P2P projects included diverse groups of people from several countries and a wide range of backgrounds. In-country field teams of deaf research assistants (for data collection, analysis, and research/ethics procedures) and deaf peer tutors (for lesson delivery in the classroom) were recruited as full-time project staff and worked with academics from the partner countries. Adult learners were invited to join P2P classes on their own initiative if they were above 18 years of age, had sufficient sign language fluency to follow the P2P programme, and were able to attend sessions regularly. The project worked with three primary schools that facilitated research with deaf children, one school each in Ghana and Uganda, and the Happy Hands School for the Deaf in India. In total, 124 young deaf adults and 79 deaf primary school children at 12 different institutions participated in the P2P programme. The research teams followed detailed ethics protocols for participant information, informed consent, the collection, protection, and anonymisation of data, confidentiality, benefit to participants, and adjustments for children's participation, with most of the ethics processes taking place through each country's sign language. The project's perspective on ethics placed great importance on the fact that all fieldwork was implemented by deaf research assistants and deaf peer tutors.

The last phase of P2P work was an impact-focused additional project that took place for another 20 months (Nov 2019–June 2021) with partners in India, Uganda and Nepal. The aim was to foster South-South collaboration in the implementation of findings from P2P research. In particular, the objective was to create training curricula and materials for professionalising the role of deaf educators in multiliteracies education with deaf learners. At the heart of this project was a six-month international train-the-trainers capacity building programme with aspiring deaf professionals from the partner countries, i.e. two Ugandans, two Nepalis and eight Indians. Participants from Nepal were not involved in earlier stages of P2P work and only joined for the training programme. Half of the participants were previous P2P project staff, and the other half were new to this kind of work. Trainees from Nepal and Uganda benefited in particular from the accessible ICT environment available in India. Even in a rural location, internet bandwidth was good, and smartphone data was very cheap. The training and capacity building programme in the South-South collaboration project was carried out at the campus of Shikha Eco-Learning Village in Odisha.

Shikha Eco-Learning Village is also the site of the second context in this chapter (in the blue circle). Work on the ecovillage development began in 2017, and Santanu Panda subsequently started working at Shikha as project manager. In addition, two farm workers support the agricultural work at the ecovillage. Besides the main five-acre site of the ecovillage, a secondary three-acre site nearby was used for agroecological experimentation between 2019 and 2022.

In 2022, a local team began documenting the water management systems at both the main and the secondary site. The idea was to document the Shikha initiative in a novel, interactive and multimedia way which would be accessible to both local and external people. This work became the prototype for the Regen-D “regenerative design” series, a format for multimedia gamified publishing. Regen-D is published by Ishara Press CIC, a not-for-profit social enterprise registered in the UK where I am one of the directors.⁴ Ishara Press is active in the area of sign languages and Deaf Studies, but its main area of work is in relation to Serious Games. I created the Regen-D series to support the voice of initiatives in sustainability and regeneration.

3 Case Studies: A Drama in Three Acts

I now explore the ways in which multilingualism, multimodality and gamification can support the democratisation of educational spaces, using examples from the two contexts described above. The case studies unfold as a drama in three acts, where these three features are cast as enabling actors.

The design features of the P2P approach were laid down in its pilot project, which constitutes Act 1 of our drama and mainly highlights the role of multilingualism as enabling actor. In Act 2, further P2P research moves on to include multimodality as an equal partner, with some gamification added into the mix. Finally, Act 3 has gamification and multimodality as the main enabling actors, as the Regen-D games enter the picture.

In Act 1 and Act 2 of the drama, the UK-Indian P2P programme co-leads, myself and Sibaji Panda, are among the principal actors. Other human characters are listed for each scene, along with the setting and the languages involved.

⁴ CIC stands for Community Interest Company and is a legal form for social enterprises in the UK.

3.1 Act 1. Priority Reversals

Act 1, Scene 1:

Title: Multiple priority reversal

Setting: Learner groups in five locations across India

Principal human characters: UK-Indian P2P programme co-leads; three research assistants; five peer tutors; 46 deaf learners

Cast of enabling actors: Multilingualism (main role); multimodality (supporting role)

Languages involved: Indian Sign Language and English

The P2P pilot was the first major step in creating teaching roles for non-traditional actors in education. In Act 1, multilingualism has been the main enabling actor because our aim was to access English literacy via Indian Sign Language. The task of the P2P pilot was to explore the potential for new ecosystems of English literacy learning with deaf sign language users. By the end of the pilot, we had identified the main components of a promising ecosystem of learning, which included (Fan, 2018):

- a sign language as the medium of instruction
- deaf peer tutors delivering learning sessions
- English literacy materials derived from authentic uses of the language
- a supporting ICT environment

Moreover, the P2P approach was strongly grounded in co-creation of learning. In fact, the peer tutors themselves were by no means perfect in English. However, they acted very effectively as facilitators and as technical experts for the virtual learning environment. Peer tutors developed English literacy learning units together with their learner groups.⁵

The learner groups used samples of English language gathered from real-world contexts rather than textbooks. These authentic language samples were called “Real-life English” and included items such as signboards, bills, forms to fill in, online shopping, social media posts, etc. The groups then worked together on explanations in sign language, a repository of words and their signed equivalents, and various language exercises, all of which was uploaded

⁵ This process was documented in a documentary film “Deaf literacy from the grassroots”, directed by Sibaji Panda and released in 2019 (see <https://islandscentre.wordpress.com/2019/02/18/deaf-literacy-from-the-grassroots-release-of-documentary-film/>).

to a virtual learning environment (Moodle). The project team also interviewed learners, analysed WhatsApp communication, and conducted standardised English language testing (Fan, 2018). Subsequent research (Zeshan et al., 2023) confirmed the finding from the pilot that being actively involved in a relatable environment of literacy is much more important for these deaf learners than accuracy in English grammar or teachers who are trained in TESOL (Teaching English to Speakers of Other Languages).

The experience of the P2P project so far had confronted us with the prevailing view that to be a legitimate teacher, the appropriate formal qualification is supposed to be of primary importance, whereas the ability to communicate and connect fully with the learners is regarded as secondary.⁶ Teaching and learning in the “P2P way”, however, was built on a reversal of these priorities, as shown in Fig. 3:

In the reverse priorities model, the rapport with learners is closely linked with the communicative environment, in this case excellent competence in Indian Sign Language, which was a requirement for candidates to be selected as peer tutors. Personal experiences and intuitions of how deaf sign language users prefer to learn underpin this rapport. This is different from mere competence in a sign language as medium of instruction. Ladd (2022) sets out the concept of “deaf pedagogies”, which is so much more than simply being able to sign. In the P2P pilot, none of the peer tutors had any formal qualifications in English or TESOL. By contrast, the conventional priorities require qualifications before anyone can legitimately act in a teaching role. As the barriers to obtaining formal qualifications are high for deaf people in India (and elsewhere), deaf learners are usually faced with formally qualified teachers who are unable to offer ease of communication through fluent

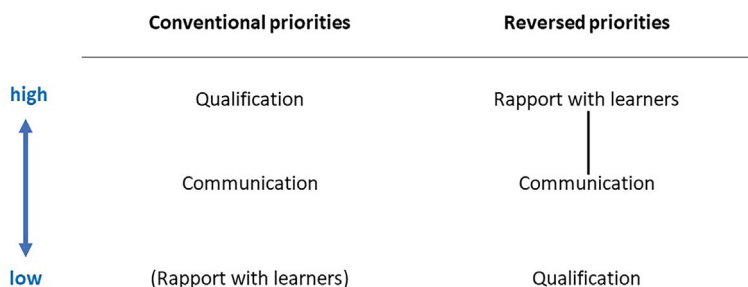


Fig. 3 Reversal of priorities in teaching deaf learners

⁶ This applied to the Indian context at the time that we were exposed to it when starting the P2P experiment. I make no generalisation across other contexts.

sign language and rapport with learners because these factors are not seen as priorities.

To represent the concept of changing priorities, the deaf lead researcher in the P2P pilot invented the sign shown in Fig. 4. This can roughly be translated as “multiple priority reversal”. Importantly, coming up with this concept was not the result of any formal analysis, literature review, or survey questionnaires. It did not come from data but from intensive project-internal discussions in Indian Sign Language about the nature of the P2P approach, where many features are the opposite of traditional practices in deaf education. The notion of “opposite” is implicit in the form of the sign because both hands are placed opposite each other. The simultaneous use of two hands independently of each other is a unique affordance of sign languages (Perniss, 2007). Therefore, a single elegant sign can encapsulate a complex notion for which there is no single word in English.

Initially, the tools of the ICT environment that was created in the project were incidental to the bilingual setting. It soon emerged, however, that multimodality was operating strongly under the radar. The learner groups communicated via WhatsApp using a combination of sign language videos, English, pictures, emojis, and other symbols. Likewise, the literacy units compiled in our virtual learning environment were multimodal with explanatory videos, real-life English texts and interactive tasks in the online environment. Gamification had not yet made its appearance, but multimodality was already a supporting cast on stage. In Act 2, multilingualism and multimodality become equally important, as our focus shifts from literacy to multiliteracies. At the same time, the ability and legitimacy of acting in research roles becomes an explicit issue.



Fig. 4 The sign meaning “multiple priority reversals”

3.2 Act 2. Innovation and Experimentation with Deaf Learners

The P2P pilot was followed by more in-depth research and capacity building, where team members increased their capabilities to act in research roles. The team configuration moved on from deaf research assistants to deaf researchers as published authors and from informal peer tutoring to professionalisation of teaching roles for deaf people. During this time, we created a number of innovations that were built on the skills of working in bi-/multilingual and multimodal ways, acquired by the project team since the P2P pilot. Gamification also became more important because we were working within a much more diverse team from five countries, including deaf community representatives, sign language interpreters, academics, in-service educators, peer tutors, and learners.

The role of multimodality in widening the circle of people who were active members of our work environment can hardly be overestimated. Working in new ways by integrating signing (in different sign languages), drawing, reading, writing, multimodal ICT communication, and interactions with physical game environments was critical in all innovations and experiments. I briefly sketch three of these innovations here, which constitute the three scenes of Act 2.⁷

When several language varieties, language modalities, and other resources from a semiotic repertoire are deployed in an interlinked way to create meaning, this has been called “chaining”, and the practice has been documented in classrooms with both deaf children (e.g. Humphries & MacDougall, 1999) and hearing children (e.g. Gynne & Bagga-Gupta, 2013), as well as non-educational contexts (e.g. Bagga-Gupta & Rao, 2018). In the examples in Act 2, chaining happens at two levels: in immediate interactions where it is improvised on the spot (e.g. when playing an English Grammar Game), and in the design processes for multimedia products and activities, where it is planned and deliberate (e.g. when designing an English Grammar Game).

⁷ See contributions in Part 2 of Webster and Zeshan (2021a) and (2021b) for more in-depth discussions of these innovations.

Act 2, Scene 1

Title: English Grammar Games

Setting: Shikha Ecovillage in rural eastern India (Odisha)

Principal human characters: UK-Indian P2P programme co-leads; 12 international deaf trainees, including four research assistants

Cast of enabling actors: Multilingualism, multimodality and gamification (all in main roles)

Languages involved: English and Indian Sign Language (with some international admixtures from the Ugandan and Nepali signers)

Real-life English was an important starting point for our work on literacy and multiliteracies, but one request kept coming up from learners, whether in Ghana or in India: teach us grammar. Explaining the grammar of a spoken/written language through a sign language is one of the more difficult teaching tasks. Why are we interested *in* something but bored *with* something? Why is a person *interested* but the object *interesting*, and what is *interest* as an abstract word? Why can we say “*I am enjoying this*” but not “*I am interesting this*”?

Teachers without sufficient signing skills are unable to explain such things, and the result is seen in cohort after cohort of deaf students graduating from school with some level of vocabulary but nevertheless functionally illiterate because they lack even the basics of grammar.⁸ On the other hand, teachers who are fully fluent in sign language, mostly deaf signers without university degrees in English or TESOL, have all the communicative tools at their disposal but are by and large themselves not competent in English grammar. In the absence of TESOL courses for (deaf) sign language users, what is to be done? The invention of English Grammar Games is an experiment that may offer a solution.

At the beginning of Scene 1, five trainees sit around a table with a laptop open to a health advice poster from Uganda and a number of folded face-down paper slips. Spinning a pen, it points to the first player, who picks up the first paper slip that reads: *[THING]s and [THINGS]s*. Reading the health poster, he identifies the target phrase on the poster: *fruits and vegetables*. Now the round is open for everyone to write their own examples with the same structure: chairs and tables, phones and laptops, etc. At the end, they all discuss what they have written and compare it with further examples that are revealed after unfolding the paper slip. Selection of the players and the

⁸ See Wilbur (2000) for an overview of the relationships between sign language and literacy, and Akanlig-Pare et al. (2021) about the challenges with deaf education in the P2P partner countries.

paper slips is random, and introducing elements of chance is an important feature in game design.

Inventing and pilot testing the English Grammar Games was part of the international capacity building programme that took place at Shikha Eco-Learning Village. The participants created and played eight grammar games in total during the programme. Figure 5 illustrates the process of creating and facilitating a game.

The main rationale for developing this game is to enable deaf learners, led by a peer tutor or even on their own, to practice grammatical structures without overt explanations or any knowledge of grammatical metalanguage (Papen & Zeshan, 2021). Instead of cumbersome terms such as preposition, conjunction, present progressive, adjective, etc., the game works on the basis of analogy and semantics. Expressions in brackets are semantically defined, to be swapped with other content words, and the remaining material is the grammatical construction, for example *.....s ands* (two plural nouns linked with the conjunction *and*). Instead of abstract tables with tenses or pronouns, grammar appears in the form of entire constructions, and these chunks appear in authentic real-life English texts. Practising reading for comprehension is an automatic by-product of the game.

The game is multimodal, as it involves chaining of signed communication, on-screen texts, grammatical phrases on paper, and writing. The core choreography has subsequently been enriched with other game features by our deaf team members. The research assistants in India have started training other aspiring deaf professionals in the methodology of English Grammar

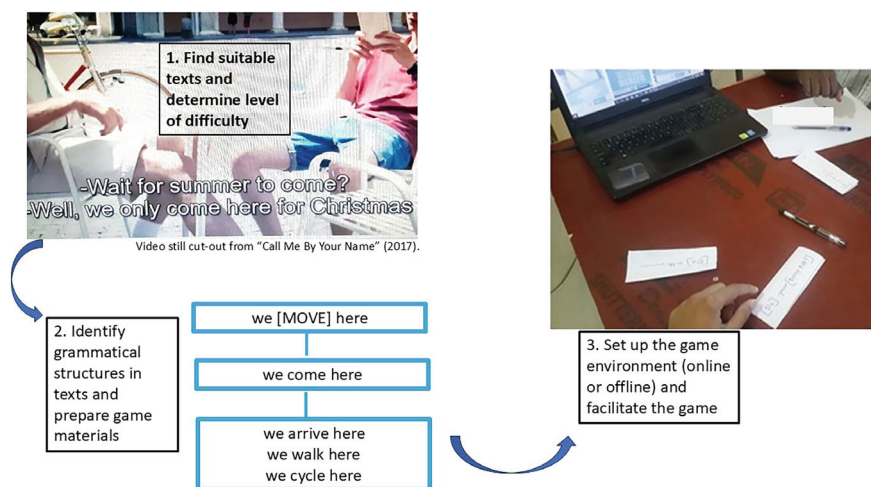


Fig. 5 Creating an English Grammar Game

Games, and from their experience, the trainers have reported that deaf learner groups enjoy gamified and competitive activities.⁹ Because learning grammar together in this way does not require technical linguistic expertise, it is possible for teacher training to be led by non-specialists in English grammar. This means that deaf learner groups can learn autonomously, without the control of the process by externally imposed expertise. While expertise as such obviously has its value, it can often be co-opted and instrumentalised as a means of colonising educational spaces because of barriers to accessing privileged positions of codified knowledge and technical specialisms.

Gamification fulfils a number of functions in this context. It serves to motivate learners—grammar is hardly the most exciting subject, and making it more engaging for learners has been one of our aims. There is further scope for developing gamified features. For example, a competition could involve a time limit, so that matching the abstract square-bracketed structures and the corresponding phrases in the English text has to be done under time pressure. In an online learning quest, progressing through levels of increasing grammatical difficulty could be made to look like a game quest.

A game-like environment also makes both teachers and learners more tolerant of mistakes and invites creativity when experimenting with extension activities. Exposure to a large number of texts and structures is more important than accuracy, and deaf learners often need to improve their personal rapport with literacy and find enjoyment in engaging with texts. English Grammar Games are therefore an apt example of ludic pedagogy (from Latin *ludere* “to play”) as proposed in Lauricella and Edmunds (2023).

The authors in Webster et al. (2024) argue that the English Grammar Games, with their combination of authentic real-life English texts, gamification, and bilingual/bimodal environment, provide a pathway for the emancipation of deaf sign language users as professionals in educational work. The ultimate goals are related to social justice, although there is a long way to go before this type of education can become more widely available for both learners and aspiring deaf educators.

⁹ See Webster et al. (2024) reporting on two rounds of training.

Act 2, Scene 2

Title: Curriculum and materials development

Setting: Shikha Ecovillage in rural eastern India (Odisha)

Principal human characters: UK-Indian P2P programme co-leads; 12 international deaf trainees, including four research assistants

Cast of enabling actors: Multilingualism and multimodality (main roles); gamification (supporting role)

Languages involved: English, Indian Sign Language, Ugandan Sign Language, Nepali Sign Language

We remain at Shikha Eco-Learning Village in this scene, where the capacity building programme is in full swing in early 2020. It is our ambition to create a curriculum and supporting materials for a university-level diploma course in teaching language and literacy to deaf learners through sign language. Gamification is in a supporting role here because compared with other examples that illustrate the main agenda in this chapter, there are not as many game features in the curriculum work, and none in the work on materials.

Part of this effort involves an experiment in co-creating the curriculum with the group of trainees, who had no prior experience with such work. The curriculum design was closely embedded with the development of topics and materials for teacher training¹⁰:

The group developed a process whereby each topic was first raised with the whole group, whether through a lecture or another activity, and then sub-groups were formed to work on the production of a signed lecture. ... [T]he training programme was an emergent process, where activities were completed at a pace that was comfortable for the learners, and with a high degree of self-organisation of sub-groups. As the body of completed lectures grew over time, this became an important scaffold for the emerging curriculum. (Zeshan, 2021, p. 244)

The resulting teacher training materials are collected in a Virtual Learning Environment (Moodle). Each unit consists of a signed lecture and a collection of supporting texts in English, divided into easier reading and more challenging reading.

When this process had gone on for a while, the time was right for a curriculum game in order to work explicitly on curriculum structure and

¹⁰ The curricula (one each for India and Uganda) are written in English, but the teacher training materials are bilingual in Indian Sign Language/Ugandan Sign Language and English.

content. Figure 6 illustrates how the curriculum game was played. A list of assessment methods (on the blue paper) and a curriculum structure (on the yellow poster) were drawn up with the group before the start of the game. The game had a simple choreography: When a player was selected by the throw of a dice, the task in each turn was to pick up a post-it note with the title of a module, place it in a curriculum structure, and assign suitable assessment methods from a list. ¹¹ The selected player is responsible for completing the turn as per the rules, but the entire group discusses the choices to be made. Amendments could be made throughout the game because the logic of modules was likely to change when others were added.

To take an example, a module about professional development for teachers was to be taught in the final semester, which is at the top of the yellow poster. The group conceived of this module as being mainly practical (shown by the selection of two green flower symbols), with some theoretical elements (a single white triangle symbol). The chosen assessment methods that the group considered a good match for this module were self-assessment tools (red pin symbol), peer observation tools (yellow pin), a portfolio (green hand symbol), and a presentation (blue hand). At each turn, the selected tokens are picked

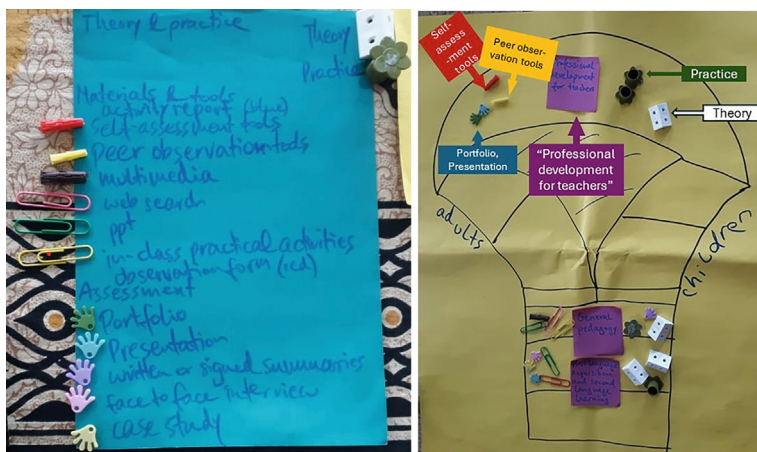


Fig. 6 Components of the curriculum game: “In-class activities and assessment methods” and “Poster of an Indian curriculum (partial)” originally published by Webster, J. & Zeshan, U. (eds.). *READ WRITE EASY: Research, practice and innovation in deaf multiliteracies*. Volume 1. Lancaster: Ishara Press. <https://library.oapen.org/handle/20.500.12657/51600> (2021), p. 245f; released under a [Creative Commons Attribution 4.0 International License \(CC BY 4.0\)](https://creativecommons.org/licenses/by/4.0/)

¹¹ The module titles were supplied by me, partly based on the teacher training materials development work up to that point.

up from a pile of tokens on the table and placed onto a field of the poster along with the module title written on the purple post-it note.

The curriculum game is an example of making challenging types of pedagogical work accessible to people who would not normally be involved in such work. Because each turn involves a group discussion, it does not matter that the players have very different levels of understanding with respect to curriculum development. Throwing a dice, picking up a note, and placing a prop on the poster could be carried out by everyone, and those with more experience naturally contributed much more to the discussion and the identification of choices within the curriculum. The results from these discussions could then be taken forward by those in our team who had technical skills and experience in curriculum development.

Along with the curricula, substantial time during the capacity building programme was taken up with the development of supporting teaching and learning materials, which could also double as a teacher's handbooks. The central feature of this process is the use of storyboards.

A storyboard is a technique used in filmmaking, where the characters, actions, camera perspective, and other directions are drawn and noted in a series of rectangles, not unlike a cartoon strip. This is helpful for both planning and production, and we adopted the storyboard method for producing signed lectures. These are at the heart of the learning materials, while written texts are supplementary.

Figure 7 shows a storyboard example. Although physically the storyboard is implemented in one modality (that is, pen and paper), it is conceptually multimodal. This is because it includes representations of different modalities, including signing (a stick figure in a square), pictures and graphs (e.g. placeholders for insert pictures and flowcharts), and written titles or subtitles. Here the chaining of different semiotic resources is very purposeful and planned. Figure 8 exemplifies how these elements from the storyboard are implemented in the final product after video editing of the lecture.

The multistep process of creating a total of 22 signed lectures in Indian Sign Language, 17 lectures in Ugandan Sign Language, and 9 lectures in Nepali Sign Language was a major learning opportunity for the trainees.¹² In particular, there was a lot of peer learning as trainees worked together in small subgroups to create these materials. Each video production subgroup was led by at least one of the four participating deaf research assistants. However, everyone was able to contribute because the production process involved a number of different skills and modalities that different people specialised in.

¹² In the time available, not all lectures could be created in all three sign languages.

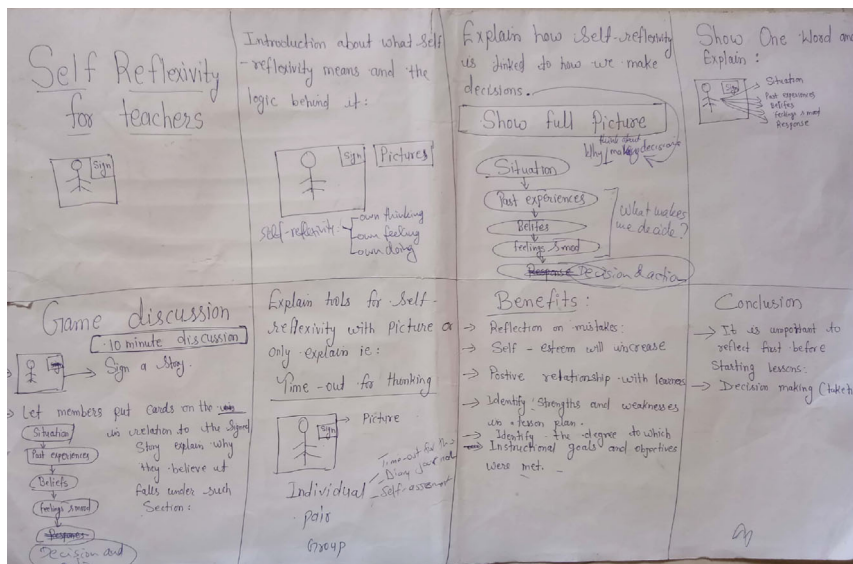


Fig. 7 Example of a storyboard: "Examples of storyboard posters" originally published by Webster, J. & Zeshan, U. (eds.). *READ WRITE EASY: Research, practice and innovation in deaf multiliteracies*. Volume 2. Lancaster: Ishara Press. <https://libRARY.open.org/handle/20.500.12657/51600> (2021), p. 220; released under a [Creative Commons Attribution 4.0 International License \(CC BY 4.0\)](#)

A schema of the process is shown in Fig. 9, leading from initial discussions in the subgroup via storyboards, filming and video editing to the final compilation of the modules and units in a virtual learning environment (VLE). Each unit on the VLE consists of at least one video lecture and several supporting readings, in both simplified and academic English (see Scene 3 for more information on the role of simplified English in our work).

The schema in Fig. 9 also shows which languages and modalities are involved in the process. Interestingly, a high level of literacy is only required at two points, namely for background research and for the final compilation. All other steps either rely on sign language or on multimodal material. The feedback and revision cycles were another crucial element because there is a strong learning effect from creating successive improved versions of each lecture or unit. Finally, some of the work involved translating completed lectures from one sign language to another. There was a lot of overlap in the curricula for India and for Uganda, and it was more efficient to work intensively in one sign language and then make translations into the other sign language.

The subgroups organised themselves to cover the different skills and roles involved in the production of lectures and units. For example, two of the trainees were highly skilled in video editing, and learning from them was

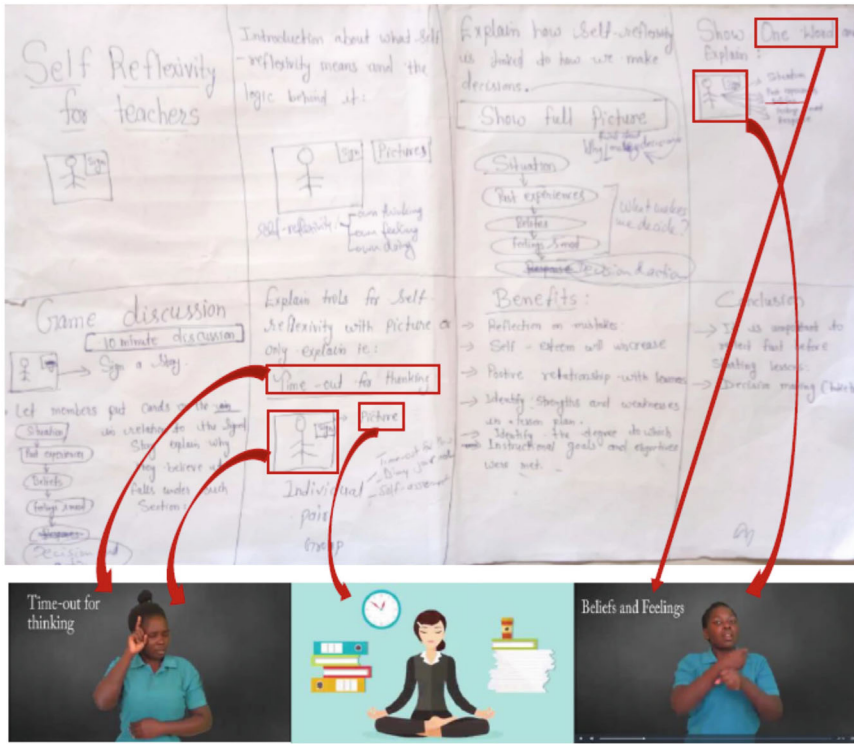


Fig. 8 “A storyboard and its corresponding implementation on video” originally published by Webster, J. & Zeshan, U. (eds.). *READ WRITE EASY: Research, practice and innovation in deaf multiliteracies. Volume 2*. Lancaster: Ishara Press. <https://library.open.org/handle/20.500.12657/51600> (2021), p. 221; released under a [Creative Commons Attribution 4.0 International License \(CC BY 4.0\)](#)

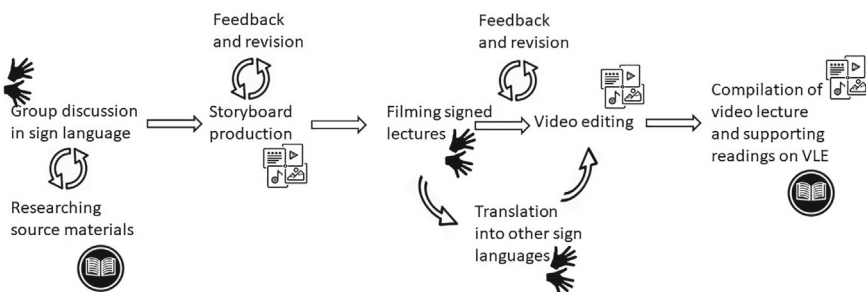


Fig. 9 Languages and modalities in the production of signed lectures: = literacy = sign language = multimedia

popular with some of the other trainees. Knowledge of pedagogy and hands-on experience with teaching also varied, and subgroup leaders were matched with topics accordingly.

In retrospect, it is worth asking what we have learned from this work in general. A striking factor is that everything is geared to maximising knowledge of the subject matter among the trainees, irrespective of the languages and modalities in which this knowledge may be expressed. The multilingual and multimodal nature of this work enables people to contribute who would otherwise have no access to such a process because of barriers to literacy. By contrast, the role of written language, in particular academic writing, is consistently demoted. Whether the notes written on the storyboard are grammatically correct is unimportant as long as the intended content is clear. This is entirely in keeping with the idea of multiple priority reversal as discussed in Act 1.

In practical terms, we also learned from the work on developing materials that the use of different languages and modalities takes a lot more time than simply writing up a lecture. A particular hurdle is also the fact that virtually all source materials which supported the development of lectures are in written English. There is not yet a stock of high-quality academic materials in any of the sign languages that were represented in our projects. Moreover, video and digital technology is crucial in working with signed lectures in an asynchronous way. That is, the lecture videos can be edited, enriched with subtitles and graphics, reviewed and revised. Without such asynchronous work on signed lectures, it is not possible to develop high-quality resources in the signed modality.

The resulting course curricula have not been implemented so far because their accreditation with in-country educational authorities is uncertain. However, this work is proof that through maximising the use of sign languages and multiple modalities, it is possible to professionalise the training of deaf sign language users as educators in an alternative fashion. This alternative removes barriers that exist due to the academic text-based culture in tertiary education. The storyboard method enabled our groups to design the content of each learning unit to a professional standard and produce these units independently, with feedback from academics.

Act 2, Scene 3

Title: Researching and publishing in deaf multiliteracies

Setting: Shikha Ecovillage in rural eastern India (Odisha); remote online support sessions between India and the UK

Principal human characters: UK-Indian P2P programme co-leads; two Indian and two Ugandan research assistants; UK language support tutor; the Indian participants in the training programme

Cast of enabling actors: Multilingualism and multimodality (main roles)

Languages involved: English and Indian Sign Language

So far, the focus has been on teaching and learning activities. We now move to a new scene: doing research and publishing the results. This is usually regarded as a highly specialised activity for which a lot of technical skills are needed, acquired over years of training, for example via a PhD. However, as part of our capacity building programme in India, we worked on research and publishing with the four P2P research assistants, two Indians and two Ugandans, none of whom had any postgraduate education.

Zooming in on this new scene, we see Nirav Pal, a deaf Indian research assistant in the P2P project, analysing the quantitative data for his research on multiliteracies skills taught to deaf primary school children at our partner school in India. He has tracked different aspects of the children's task-based learning and scored the results with respect to involvement (how motivated the children were to undertake the tasks), achievement (how well they could do the tasks), and the accuracy and range of language used in the tasks. He is clear about the findings from the research but expressing his observations on the data in English is difficult. By this time, we are in the strict Indian COVID lockdown, so the face-to-face sessions that we had been running in the first four months of our capacity building programme are no longer possible.

The solution for Nirav is a multimodal work stream. He combines screenshots of the data with his analysis expressed in a sign language video (see Fig. 10) and sends this off to Jenny Webster, an experienced language support tutor as well as a project member. Jenny converts the signed text into written English. Less complex parts of the text are resolved by sending drafts in English back-and-forth for feedback. General issues such as the structure of the text are discussed on video calls. At the end a one-year process, Nirav has finalised one chapter as first author jointly with others and another chapter as sole author.

as sign language videos with embedded pictures and (sub)titles, would have been entirely feasible, but this work takes a lot of time and the project ended before we could take this on.

However, we did produce alternative outputs of this kind in a different work stream as part of our capacity building programme. Some of the Indian trainees in our group had a substantial further task in addition to the curriculum and materials for the professionalisation of deaf teaching roles. We worked with the National Institute of Open Schooling (NIOS) to support their development of a course in Indian Sign Language at high school level (see Singh & Mahapatra, 2021). Our team created the 17 lessons that constitute the core theory materials for this course. Three team members were also members of the curriculum committee at NIOS.

We again worked with the storyboard method to create all lessons in the form of sign language videos with integrated pictures and subtitles. The subgroup working on the NIOS lessons had to research the content from available sources, though there was no primary data or data analysis involved.

After all lessons had been created as videos, they were back-translated into English, and additional features were added as per the standard NIOS format, e.g. in-text questions and lesson summaries. In its previous work on supporting deaf learners through sign language, NIOS staff translated written course materials into Indian Sign Language. However, our approach was the opposite, with the signed lectures as the primary material. This meant that team members with less fluency in written English, particularly academic English, took on genuine expert roles in the creation of these lessons.

3.3 Act 3: Profiling Sustainability/Regeneration Initiatives in Game Form

We now leave the context of deaf communities and education on language and multiliteracies. The third example comes from a setting outside deaf education, though it links back to the Shikha Eco-Learning Village that we are already familiar with. This work takes place in India and in the UK and results in a multimedia publication in game form that showcases the ecovillage's design.

Act 3, Scene 1

Title: Regen-D (Regenerative Design)

Setting: Shikha Ecovillage, Odisha, India; game studio at Ishara Press in Lancaster, UK

Principal human characters: Indian game authors at Shikha Eco-Learning Village; members of the game studio at Ishara Press, UK

Cast of enabling actors: Gamification and multimodality (main roles); multilingualism (supporting role)

Languages involved: Sambalpuri, Odia, Indian Sign Language, English

Zooming into the ecovillage in 2022, we find the Shikha founder Sibaji Panda and the project manager Santanu Panda taking photos and filming videos to represent those parts of the ecovillage's functioning that have to do with water management. Then they add voiceovers, annotate photos and graphics bilingually in English and in the local languages Sambalpuri and Odia, and create multimedia files in other applications including PowerPoint and Excel. One of the videos is in Indian Sign Language with English subtitles, while spoken Sambalpuri has English subtitles and written materials have English and Odia versions. In western Odisha, the dominant language is Sambalpuri, which is however largely used as a language of oral communication. For written contexts, people generally use Odia, the official language of the state of Odisha and the language of formal education. The choice of language in the multimedia materials in the Regen-D game mirrors these linguistic practices.

A year later, all these multimedia files have been linked to QR-codes and integrated into a game choreography. At the heart of the game there are 11 wooden disks with a QR code on one side and a corresponding placeholder picture from the linked multimedia file on the other side of each disk (Fig. 11). During the game, players scan the QR code and discuss the multimedia file that appears on screen. The placeholder picture is a cut-out from the multimedia file and serves as a reminder to its content.

Shikha Eco-Learning Village developed as an off-grid setting for experimenting with alternative learning and agroecology. As of 2024, the Ecovillage has around 70 residents at its main site, including 52 children in a residential primary school for deaf children. The school has (mostly deaf) academic and support staff. Some local farm workers look after the vegetable gardens, the fruit orchards, and the farm animals. Chemical-free farming is practised at Shikha, and the produce are used in the school kitchen.

Besides solar electricity, the water management systems at Shikha are the most important infrastructure. These were built over several years and include

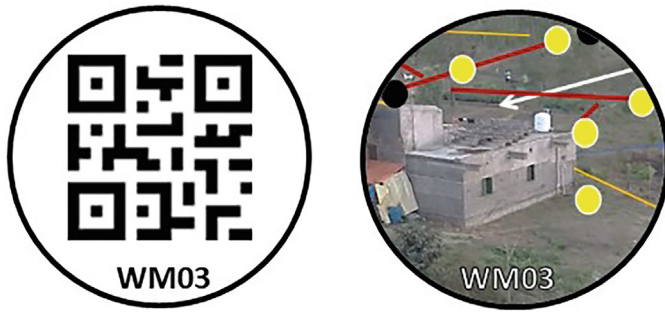


Fig. 11 QR-code disks (front and back)

pumping systems with a number of water tanks at different elevations, drip irrigation systems, grey water harvesting, and solar hot water.

Shikha's low-cost design, created by local people using mostly local materials, is of interest from the point of view of sustainability. As a case study, its documentation is valuable for other potential initiatives considering alternatives to large-scale monocultures with intensive use of herbicides, pesticides and chemical fertiliser. Water management is a particularly suitable angle of documentation because it touches upon many aspects of the ecovillage's operation, including both domestic and agricultural water use as well as design features for the judicious use of the local water resources.

In 2023, we published "Water management systems at Shikha Ecovillage" (Panda, Panda & Zeshan), the first in the Regen-D ("Regenerative Design") series that showcases initiatives in sustainability and regeneration. This is a composite publication consisting of a Serious Game and a supplementary ebook. That is, people are invited to gain an understanding of Shikha Eco-Learning Village by playing the game first, and reading the ebook afterwards is optional.¹⁴

Regen-D games consist of a wooden selector wheel and different types of wooden disks—QR-code disks, joker disks, and smaller disks for the tasks of linking and evaluating the materials associated with the QR-code disks. By spinning the selector wheel the players are prompted to take turns choosing disks and assembling them into a diagram on the table. The aim is for the group to discuss the multimedia files that represent aspects of the regenerative initiative. Playing a move does not mean that one has to be an expert on the topic; the only responsibility is to host the group conversation and make sure a discussion takes place.

¹⁴ The exception is where facilitators or teachers plan to play the game with a group of learners, in which case the recommendation is that they read the ebook first and then facilitate the game.

The multimedia files are like a curated online exhibition, where the game process generates a randomised walk-through and a visualisation of the materials in the exhibition. In the course of the game, a diagram is created that represents what has been discussed so far (Fig. 12).

As a learning experience, playing Regen-D is very different from reading a text, viewing a presentation, or watching a documentary film. The game is based on group discussions as its core activity. Making sense of the topic requires active thinking in the game because the constituent parts of the topic arrive in random order. Players need to work hard to make sense of the developing picture. Nevertheless, spinning the selector wheel and choosing the next move is designed to be fun, and the mental work is balanced with playfulness. The game format supports an easy tolerance for mistakes, which is pertinent because a file already viewed will often appear differently in the light of later files, forcing players to reassess their understanding.

Finally, and perhaps most importantly, framing the activity as a game creates a non-threatening environment and cues more open social interactions (see Zeshan, 2020, on the effects of Serious Games on communication and social interaction). Players are allowed to speculate wildly, make jokes, or contribute personal anecdotes in the game. The game format also licences emotional behaviour; for example, laughing together is excellent for bonding with a group.

Regen-D games serve the aim of democratisation in two ways. Firstly, the format enables people to become authors who would not otherwise have this opportunity. Multimedia materials like Regen-D can be assembled without any need for academic writing. Indeed, several attempts at documenting work at the Shikha Eco-Learning Village campus in writing failed, presumably because those developing the site either found it too time-consuming, or were not familiar with written reporting, or did not like it as a format. It was only when the idea of developing a game came up that suddenly the work on multimedia documentation took off. Test playing early versions of the game on site also served to raise motivation.

With respect to authorship of Regen-D games, it is important to emphasise that compiling the selection of multimedia files is a challenging and rigorous process. As anyone who has ever curated an exhibition knows, a serious intellectual effort is involved. Unlike in conventional publishing in academic books or journals, the multimedia materials are not additional supplements but the primary output. The Regen-D series has an editorial board for peer review, whose members are directed by the publisher to review both the collection of multimedia files and the optional ebook.



Fig. 12 Diagram of disks midway through a Regen-D game

Secondly, the Regen-D series has been set up to publish multilingually. The game materials and the ebook appear in at least one language of the local context where the published initiative is embedded, as well as in an international language, usually English. Annotated pictures or diagrams have a separate version in both English and Odia, videos with spoken Sambalpuri have English voiceover, and non-speech videos have English subtitles with voiceover in Sambalpuri. However, unlike in Act 2, the English version and the Sambalpuri/Odia version exist as parallel options rather than being closely intertwined, which is why multilingualism is cast in a supporting role here.

By using the local language(s) of the context, the Regen-D publications are accessible to the people who are local to the published initiative. Publishing only in English creates a barrier. Far too often, research and development is carried out with local people but not published in languages that these same local people can understand. There is a parallel here with sign language linguistics and Deaf Studies. It has long been regarded as good practice to produce translations of (parts or summaries of) publications into sign languages, so that deaf communities can access the results of research. There are also examples of academic publishing entirely in the sign language medium,¹⁵ but the equivalent is not yet happening in other areas such as international development.

4 The Effects of Democratising Educational Spaces

The acts and scenes in Sect. 3 have shown us different aspects of democratising educational spaces. These can be summarised in the form of questions and examples:

Who can teach learners?—Act 1 on peer-to-peer teaching for literacy

Who can train teachers?—Act 2, Scene 1 on teacher training for English Grammar Games

Who can design learning?—Act 2, Scene 2 on the curriculum game and the storyboard method for lesson design

¹⁵ The Deaf Studies Digital Journal (DSDJ) has contributions in American Sign Language and in International Sign (<https://www.deafstudiesdigitaljournal.org/>). Research students submitting (part of) their thesis as a sign language video is another attempt at academic content directly produced in sign languages. A particularly useful example in the context of this chapter is the bilingual publication in English and International Sign of the “Manual for Sign Language Work within Development Cooperation” (FAD & WFD, 2015).

Who can do educational research?—Act 2, Scene 3 on supporting first-time deaf authors

Who can publish?—Act 3 on Regen-D authors

Implicit in all these questions is the notion of legitimacy. That is, how can we make sure that non-traditional entrants into these activities are regarded as legitimate educational practitioners, research scholars and/or authors? Curricula that are designed in a new way, and teachers trained accordingly, should be able to gain accreditation. Research produced in non-traditional ways should be widely publishable. Trying to do this leads to a natural consequence, namely that our understanding of what constitutes legitimate professionals in language and education or legitimate and rigorous research in these areas may itself have to change.

Apart from publishing, another question is the rationale for professionalising the role of non-traditional teachers, teacher trainers and learning designers. This has to do with the “multiple priority reversal” in Act 1; that is, we may want these educational professionals to be steeped in how a culturally and linguistically distinct group interacts, communicates, and learns. These professionals will often be able to empathise deeply with the previous educational experiences of learners because their own experiences have been similar. The case of sign languages and deaf communities highlights this point with particular clarity because it is impossible to really understand, as a hearing person, the life of someone who was born deaf or is prelingually deaf.¹⁶ Hence the potential value of deaf sign language using teachers is compelling. The educational environments of other (non-deaf) linguistic and cultural minorities can similarly benefit from such a priority reversal and from increased appreciation of rapport, empathy and communicative ease in learning.

With respect to research, we are dealing with researchers and research participants instead of teachers and learners, but the same logic applies to the relationships in the research process. Prioritising the authenticity of a research context instead of the formal qualifications of researchers leads to a different kind of research. That is, we recognise that an authentic deep understanding of the linguistic and cultural context adds greatly to the validity of research, and methodological rigour, while not irrelevant, is no longer the top priority.

¹⁶ Of course, not all people are born deaf or prelingually deaf (i.e. deaf in their early years of life, before they have sufficiently acquired a spoken language). I am mentioning this sub-group because the argument for prioritising shared cultural and linguistic grounding is particularly pertinent in relation to prelingually deaf learners.

In parallel with prelingually deaf people, I would argue that it is just as impossible for a person from a background with many social, economic and educational privileges, as academics tend to be, to really understand the lives of people under heavy debt burdens, in non-literate cultures, below the poverty line, in a context of permanent war, etc. However, unlike in sign language linguistics and Deaf Studies, we rarely see researchers from such backgrounds undertaking and publishing their own research, whether alone or with others. In the areas of sign languages, deaf education, and Deaf Studies, deaf sign language users have been active in ever more senior roles over the past decades. Therefore, they can act as frontrunners in the efforts to legitimise non-standard entrants into education and research.

How exactly research and professional roles need to be redefined to naturally accommodate non-standard entrants in the language and education sciences is a question that would need a lot more investigation and thinking. Such ideas will likely be controversial, as they affect current power dynamics in these fields, but are worth being put on the table. For instance, established researchers and education professionals might begin to redefine themselves as allies who support non-standard entrants and at times voluntarily retreat into the background.

The implications of professionalising roles in educational spaces for deaf sign language users will have become clear from the case studies in Sect. 3. To conclude this chapter, I now summarise some points where experiences from the contexts in this chapter can profitably be transferred to other contexts.

One of the more important design features of the P2P work has been the establishment of chains of learning. That is, our deaf research team involved people with different skill levels working closely together and moving up the ladder of skills. The roles corresponding to these increasing levels of professionalisation were delineated (in a somewhat idealised way) as “learners”, “peer tutors”, “research assistants”, and “lead researchers”. For instance, an Indian staff member began as peer tutor in the P2P pilot, then became a research assistant, and is now a full-time formally qualified teacher. A Ugandan peer tutor first became a research assistant and then started guest lecturing at a Ugandan university after the end of the P2P projects.

From the experiences of the P2P research teams, the process of creating access for non-standard entrants to professional roles in education and research is slow. It is unlikely to happen within a typical three-year project cycle, at least not to the extent that it will become embedded for the longer term. Therefore, another conclusion to be drawn for other contexts is that we must take a long-term view if we aim to democratise educational spaces. The case of the Regen-D games is somewhat different because the aim is to

produce a publication with educational uses, and not for the authors from the grassroots initiatives to stand in a classroom and teach. Gaining authorship through innovative formats of publishing is therefore much easier and quicker and could be a stepping stone in other contexts too.

For both contexts discussed in this chapter, the P2P work and the Regen-D publications, there are large cultural, linguistic and educational differences between the teams carrying out the work. To work with such diverse teams, it is valuable to have team members who can bridge these different backgrounds. These “bridge people” understand the communicative styles and cultural backgrounds of different people in the team, and they have proved essential for our work. During meetings or trainings, these people often rephrase what is being said, thereby mediating between different styles of communication and not just between languages. For instance, one of the Ugandan trainees during the six-month training had previously studied in India for four years and was bilingual in Indian Sign Language and Ugandan Sign Language. He provided valuable mediation for the new Ugandan participant who had never been in India. In a project that largely sits within the disciplinary boundaries of (applied) linguistics, it is perhaps natural that we are very aware of the multilingualism and multimodality present in each situation. This is something that projects outside of linguistics could learn from.

Moving on to the learner’s point of view, the motivation to learn is obviously crucial. Seeing teachers from one’s own background in professional roles as educators can be a powerful motivation for learners and raise their aspirations to emulate these role models. And it is not only deaf learners who need to befriend language and literacy education, for which gamification in particular can be helpful.

Regarding tools and techniques that can support access to privileged roles, deaf and deaf-hearing spaces have emerged as frontrunners in this chapter. The concept of Deaf Gain is pertinent here (Bauman & Murray, 2014), which means that deaf people’s unique ways of doing and being have specific advantages in language, culture, creativity, and the recognition of human diversity. To take a practical example, many design features of Serious Games in Zeshan (2020) have been strongly influenced by experiences of typical visually oriented interactions with deaf people, such as sitting in a circle, prioritising varied visual prompts over reading and writing, and enjoying conviviality with each other. These features have then carried over into further games that are outside the deaf context, such as the Regen-D series.

Deaf Gain is all the more remarkable because at the same time, it has been argued that deaf people are a colonised minority (Ladd, 2003; see also

an appraisal of Ladd by Anglin-Jaffe, 2015). The majority hearing culture has long used education to suppress sign languages in favour of enforced lipreading and oral speech and has put deaf people under pressure of being normalised into the mainstream. If we follow this narrative of colonisation, work such as in the P2P projects means that deaf people are enabled to decolonise themselves as they start to enter deaf education themselves as bona fide professionals.

This chapter has raised questions and discussed examples where privileged linguistic and educational spaces are challenged. The implications are perhaps not easy or comfortable for mainstream education and scholarship, but on the other hand, diverse teams are interesting and enjoyable. The buzz brought about by multimodal and gamified settings is very useful in lowering barriers in a non-threatening way. I argue that democratisation of educational spaces must bring with it redefinitions of various kinds: redefining what constitutes valid and rigorous research, how we see formally accredited professional training and hence legitimacy for taking up roles in teaching and training, and the role of context-independent codified knowledge in relation to situated knowledge. Much conceptual work remains to be done in spelling out the details of such redefinitions.

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Reflective Statement

Looking back over several phases of our work up to the present, we believe that our team at the Happy Hands School for the Deaf (HHSD) has created an ecosystem of learning that is both learner-centric and teacher-centric. On the one hand, teachers make every effort to match the needs of the deaf children they are teaching, in line with the ethos of the previous peer-to-peer projects. At the same time, the teachers have complete autonomy to choose themes for constructing “learning roads” along with cross-subject learning activities branching out from each theme. The dynamics of a learning environment that is learner- and teacher-centric at the same time have emerged

via experimentation at HHSD, so it is worth thinking about the design features of such an environment more explicitly. We need to establish clearly which capacities we are fostering in teachers and learners, and how these capacities can best be supported.

As detailed in this chapter, our team has been active in teacher training and the development of multilingual and multimodal educational materials. We are now looking for a process that would enable these innovations to be validated within the Indian educational systems, in particular school education. I have called the theory upon which this potential validation rests the “reverse curriculum”. At the end of each cross-subject learning journey, we link back to the official school curriculum where the content that has been covered can be recorded. Several interactive and easy-to-use mapping and listing tools have been invented for this purpose. These tools are useful internally for the teachers and the school management to keep a sense of progression of learning. At the same time, the reverse curriculum provides educational legitimacy externally. Without some official validation, ideally in the form of accredited teacher training for language minority contexts, our work will remain a small case study.

While accreditation is a practical and political issue, we also need to strengthen the conceptual basis of our work. The possibility of an educational setting where all participants benefit from self-empowering features in different ways is intriguing. However, we have not properly understood how such features within an ecosystem of learning relate to each other. If we can make conceptual progress with this understanding, it may then be possible to apply the underlying logic to other educational contexts. I believe that there are many similarities between spoken language minorities and deaf sign language users in terms of barriers to learning, and that all educational settings could derive some benefits from multimodal and gamified learning. However, we are dealing with systemic innovations in our work which are complex and context dependent. How these kinds of innovations can spread is a big unsolved question. An ecosystem of learning cannot be packaged as a simple intervention for upscaling, but an alternative theory of spreading systemic innovations seems to be largely absent from the conceptual landscape. If decolonisation of educational spaces shall be a broader effort, a theory of spreading systemic innovations is highly desirable.

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