This paper discusses how a western design researcher applied co-design to create a situated learning environment within a Ghanaian community. The objective was to co-design a situation wherein a Ghanaian community could become engaged in on-going learning processes, based on local knowledge, skills and resources in order to ultimately enhance resilience of the community and form a counterforce to increasing youth unemployment. The design-research process was based on action research. The result took the shape of the Discover Area: an outdoor open workshop space where community members can facilitate or participate in experiential workshops based on local skills and knowledge and the use of waste- and natural materials. The workshops amplify the creativity, confidence and problem-solving skills of the participants and herewith enhance the community’s resilience. The Discover Area was co-designed by intensive collaboration with the local community, building a stakeholder network of professors, teachers and craftsmen and setting up a local committee as well as a local successor for the Western initiator of the project in order to enhance sustainability of the platform. The Discover Area was situated on the roadside so that the workshop activities and results triggered curiosity within the community. It offered opportunities for up-cycling waste materials through demonstrating the value of craftsmanship and it stimulated youth employment through in-class projects and after school workshops.

Keywords: Ingenuity from craftsmanship, intercultural co-design, up-cycling natural- and waste materials

1 INTRODUCTION

This paper describes a design case on situated learning in Ghana. The project was situated in Abetifi, a small town in South-East Ghana where the AMO Programme is located. AMO is a Ghanaian NGO who develop Teacher Learning Materials (TLM’s) based on Montessori education, from local wood with local carpenters and sell it to primary schools throughout Ghana. This provided the context of the research: primary education in Abetifi, Ghana.

In 1957 Ghana was the first African country that celebrated independence, after being a British colony. The country is generally religious: 68% of Ghanaians are Christian and at least 25% are Muslim (Briggs, 2010). Ghana is recognised as a hospitable country with a collectivistic and strongly hierarchical culture (Hofstede et al, 2010). As schools are embedded in local cultural systems (Dimmock et al, 2000), the cultural hierarchy is also clearly visible in Ghanaian schools. Classes are teacher-centred and learners learn by repeating the teacher (Adjei, 2012).
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Western development programmes have frequently implemented ideas of cooperative or experiential learning in African education; efforts that failed due to a mismatch or ignorance of cultural values (Vavrus, 2009; Phuong-Mai et al, 2005).

In the 1980’s there was a shift from blueprint approaches to process-based approaches to development, as reaction to the disappointing outcomes of rigid management of development projects. Participation, part of a process-based working style, became the focus of NGO’s (Bond et al, 1999). Going beyond Participatory approaches, a process-based approach carries out acknowledgement of the involvement of stakeholders in setting project goals and implementing- and monitoring them. It inherently captures the spirit of Decentralisation: the redistribution of power and influence in decision-making processes (Bond et al, 1999).

The focus on process has led to a simultaneous focus on local-for-local development, whereby the role of external agents and resources should be minimised (Bond et al, 1999). Uphoff (1990) makes a distinction between projects in the local context, and ‘para-projects’- the latter including external interventions with the goal to help marginalized people help themselves by empowering them rather than create impact from the outside-in.

Following this essential notion of locality is a specific learning style defined by Lave and Wenger (1991) as Situated Learning. It sees learning is a social bi-directional process in which knowledge is co-constructed. Herewith, the traditional distinction between teachers and learners fades. Moreover Situated Learning recognises that knowledge cannot be decontextualised and learning is always situated in a specific context. Lave and Wenger continue to add that learning is embedded within an explicit social- and physical environment. (Lave et al, 1991). The social environment includes people, each with their own skills, knowledge or talent. A community of practice (CoP) is a group of people who share the same skills, knowledge and interests. They are informal groups and members can work independently or within different organisations. The CoP is a social connection wherein members share their knowledge based on a master-apprentice way of learning and herewith spread- or even reach innovations (Wenger et al,2000).

2 DESIGN-RESEARCH APPROACH

The design-research process was set up in two fieldwork periods in Ghana, of three and eight weeks. The first fieldwork consisted mainly of observation and two iterations of co-design to deeper empathise with the context. The second fieldwork was about co-designing a place for learning within the community and consisted mainly of building a stakeholder network and research-through-design iterations of trying out what shape the place for learning should take.

In order to reach educational change, a culture-sensitive approach is necessary (Nijhuis et al, 2012). Therefore, the approach to this project was highly participatory. An enhanced form of Participatory design is Co-Design: literally, people designing together. The concept of Co-Design is that when all people who have a stake in the project are given a role in the development of the project, the design-research project will benefit from a feeling of collectiveness and variety of ideas and opportunities that emerge when combining the viewpoints (Sanders, 2002).

A key component of methods to involve people in Co-Design processes is ‘making’. A variety of design tools enable people to express their feelings, experiences and dreams by making and creating (Frascara, 2003). Such tools provide meaningful input for Co-Design processes and enable design-researchers to empathise with the stakeholder and daily life in the project’s context. By expressing oneself through making, a new language to Co-Design is established
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(Frascara, 2003). This shaping of a new, common, language makes co-design a suitable approach to this intercultural community project.

‘Making’ can be done at any point in the design-research process, by acting on momentary assumptions or contextual insights. Making leads to artefacts that contain these ideas, and they can be evaluated by confronting the artefact with the context. This confrontation evaluation can generate insights upon which further iterations can be done, to continuously challenge assumptions and build onto gained insights (Hengeveld, 2011). This approach, with the emphasis on making artefacts, is called Research-through-Design, a design-specific variant of Action Research. Koskinen et al. (2011) suggest that Action Research provided an underlying model for Research-through-Design.

Design Research Challenge
Through the discussion of a design case in the education context in Ghana, this paper aims at researching to what extent co-design can contribute to the development of a situated learning community in Ghana.

3 FIELDWORK PERIOD 1

The first half of the fieldwork focused on observation: shadowing stakeholders in their daily life. The design-researcher (the first author) sat in several school classes from primary- to vocational school and university and she also stood in front of classes to give guest lectures; getting these different perspectives helped her to gain a deeper understanding of the educational context (Tomico et al, 2012). The passive, shadowing approach also gave the Ghanaians time to get used to her presence and get to know her a bit. At the same time it gave the design-researcher the opportunity to acclimatise, observe and ask questions about the current ways of doing. By asking many questions, the design-researchers put herself in a vulnerable position, which led to extensive explanations by helpful Ghanaians, shedding light on their ways of thinking and reasoning behind their daily doings. These personal reflections introduced the first step to Co-Designing.

With plenty of inspiration, the design-researcher’s sketchbook was full of ideas. Instead of asking questions, she now used the sketchbook to trigger responses. Later, the sketchbook itself became a vehicle for co-design, as the design-researcher found that when she left it lying around, often Ghanaians would pick it up and start discussing some of my sketches amongst each other. In Ghana, when something is left in a public space, it becomes public property. Playing into this cultural phenomenon, the design-researcher started to intentionally leave her sketchbook unattended. This became a mechanism for spontaneous co-design moments; instead of arranged sessions, Ghanaians would approach her and insist that she explained what she had drawn on a particular page in the sketchbook.
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Figure 2 – The role of sketches in co-designing with local craftsmen (seamstress, carpenters)

Together with a local seamstress and carpenters, the design-researcher co-designed two TLM prototypes.

Through two research-through-design iterations the design-researcher co-designed with local craftsmen (a seamstress and carpenters) with the result of two tools for experiential learning in the classroom (Kolb and Kolb, 2005). While co-designing it was important to keep the craftsmen in their role as experts of their skill. The design-researcher did not make construction or pattern drawings (the craftsmen used freedom of interpretation) and the seamstress was asked to create a creative solution that was not predesigned. The design-researcher made ‘paper-prototypes’ from cardboard, but did specifically not use the materials of the craftsmen; nor fabric nor wood. In this way, the carpenters did all the woodwork, and the seamstress did the sewing and so they were left in charge of their own expertise. This prototyping step opened up an extra opportunity for discussion and influence of other people who saw the paper model.

Figure 3 – Co-making process with carpenters: from paper (design-researcher) to wood (carpenter)

These prototypes embodied the first contextual insights and they were evaluated with teachers and learners on public- and private- primary- and junior-high schools. This showed that due to cultural hierarchy (Hofstede, 2010) the teachers tended to nullify the explorative nature of the tools by interfering the children’s explorations with hints or orders. The children were quite shy to explore without directions, but enjoyed figuring it out with peers and were very proud when they completed.
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4 FIELDWORK PERIOD 2

The second fieldwork encompassed the co-design of a platform for situated learning within the community of practice of Abetifi (Lave et al, 1991). It took the shape of the Discover Area: an outdoor open workshop space where community members can facilitate or participate in experiential workshops based on local skills and knowledge and the use of waste- and natural materials. It is a podium for craftsmanship, be it traditional or self-made. The workshops amplify the creativity, confidence and problem-solving skills and herewith could ultimately enhance the community’s resilience.

The Discover Area was co-designed by intensive collaboration with the local community, building a stakeholder network of professors, teachers and craftsmen and setting up a local committee as well as a local successor for the design-researcher, who was the Western initiator of the project, in order to enhance sustainability of the platform. By going through research-through-design iterations, in which the workshop format was the design, the members of the committee had shared experience and could establish a common vision for the Discover Area, from which the focus on recycling and especially up-cycling was born.
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Resource persons, who could be craftsmen or teachers, but also parents, children or students, facilitated the workshops to demonstrate that learning also happens outside of the classroom, in unexpected situations with unexpected people. The Discover Area was situated on the roadside of the paved road (main road) of Abetifi, so that the workshop activities and results triggered curiosity within the community. Taxi drivers often stopped next to the Discover Area, to watch the workshops while waiting for customers.

Figure 6 – The Discover Area is located right beside the main road: a taxi driver observes the activities

The activities focused on the youngsters, as they took placing during working hours and were most willing to ‘try something new’. At first the Discover Area was part of school classes, but it evolved into a voluntary after school activity. Two primary school teachers started an in-class project based on a Discover Area workshop: making a car from raffia branches.

Figure 7: Discover area workshops

As participants of workshops experienced how they could turn readily available waste or natural materials into something beautiful or usable, they discovered their ingenuity, creativity and confidence. Slowly, the Discover Area changed the perception of the value of crafts in the community, as people were given the
opportunity to ‘see the value of it for themselves’; e.g. to experience how crafts can transform a problem of waste management into an opportunity of up-cycling, by sewing a fashionable bag from used water sachets.

5 OVERALL REFLECTION AND CONCLUSION

The Discover Area is the output of a co-design project between a Western design-researcher and a local community in Ghana. It is a platform for situated learning, and co-design was a vehicle to establish this. However, co-design took on specific forms in this intercultural collaboration process, which will be outlined to conclude how co-design has contributed to founding the Discover Area for and with the local community.

Role of Western design-researcher in co-design

In this intercultural community project, the role of the Western design-researcher was to demonstrate an alternative to the current situation of the local community; to give a suggestion for ‘what education could be like’. The value of the co-design process was consequently in broadening the horizons of the community- leaving the choice of whether and how to act upon it completely up to them. The impact of the Discover Area as design intervention is not in the workshops that were organised, defined as ‘output’ in terms of World Bank development indicators. The impact of the design intervention is the influence on thought processes of people in the context: the integration of the ‘new’ philosophy in the educational situation, and expansion to influence daily life, which can be indicates as ‘outcome’ (Bowen et al, 2003). An example that indicates such outcomes is the make-a-car project that was adopted by two teachers as in-class project based on car-from-raffia workshop in the Discover Area.

Embedding project and co-design method in cultural context

The fieldwork shows that it is essential to collaborate with local stakeholders, in order to embed a design project in the local context. Moreover, it demonstrates the value of a carefully composed stakeholder network: the right person in the right place can change everything.

Through several iterations, the co-design approach was adjusted to the hierarchical Ghanaian culture and included the appointment of influential people, the use of intermediaries and existing channels within power structures. In this way, the project could be positioned within societal systems and social structures, ensuring local relevance and sustainability- in the project case this led to the foundation of a local committee.

Practical tools for intercultural co-design with local craftsmen

Through the fieldwork the design-researcher found some practical tools to foster the co-design process. The general recommendation that flows from this is to not prepare tools and methods into detail on beforehand; but to generate them in-situ, inspired by the (cultural) phenomena in the context.

The fieldwork showed that sketches could not only be used to communicate, but also to trigger curiosity and to ideate together. Leaving the sketchbook in public space even created spontaneous co-design discussions, brought up by Ghanaians, and can therefore be a mechanism to acquire highly informal feedback during the co-design process.

Another simple and practical tool, most suitable for sensitising the stakeholder for the co-design process, was to ask questions based on cultural differences. In Ghana, such questions touch the hospitable, helpful spirit of the people and trigger elaborate explanations. As these are always based on personal perspectives, the responses can give design-researchers insight into the
stakeholders’ ways of thinking, reasoning and motivations behind activities that are observed. Acknowledging cultural differences helps to discover fertile co-design opportunities; it creates a synergy of the different viewpoints. Another practical mechanism that enhanced co-design was that the design-researcher created paper models or rough sketches before going to ‘real production’. This created an extra step in the co-design process and gave the craftsmen more occasions to interpret the ideas and form a vision about them. Furthermore, the design-researcher specifically approached the craftsmen for their expertise, without interfering in their domain. For example, she used paper but never fabric while co-designing with a seamstress.

Impact on community
The Discover Area, being located on the roadside has given a podium to local craftsmen. As community members saw their skills applied in innovative ways (e.g. up-cycling) and could experience the difficulty of the techniques during workshops, the appreciation of craftsmanship grew, from being looked down upon to being noticed as a way to make a living by creating ingenious products. As result of participating in the hands-on workshops, the youngsters of the community got used to their freedom to explore and they interacted ruder with materials and tools, had determined ideas of what they were making and proudly showed off their creations. Because youngsters were frequent facilitators in the Discover Area, they practised their leadership skills and participants seemed to become more confident on their abilities as, in the Discover Area, they had found a place to demonstrate their skills, where the outcomes of their explorations were appreciated.

Figure 8 – Two WhatsApp screenshots of updates of the Discover Area from the local successor Afful

Sustainment of Discover Area itself
During a co-design period in the spring of 2014, the Discover Area was co-founded and 14 workshops were facilitated by local craftsmen, teachers or children themselves. When the design-researcher left Abetifi the project was already smoothly transmitted to her local successor and his local committee. In the following months, they organised at least three more workshops. Meanwhile, the canopy of the Discover Area was broken down due to future plans of the local church. The workshops continued under a large almond tree, near the original location of the Discover Area. At the time of writing the workshops themselves seem to have stopped. There has not been an opportunity to revisit Abetifi to evaluate whether the Discover Area had a long-lasting effect on e.g. primary education in classrooms, as the make-a-car project did indicate shortly after the Discover Area was initiated.
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6 REFERENCES


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