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# Advancing HCI Education in Egypt: Exploring Lived Cultural Heritage Through Design

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**Abstract**

We present the Hilali Network, a transnational collaboration which transcends geographic and conceptual borders to merge current reform in Egyptian higher education and local community-led digital preservation and protection of Intangible Cultural Heritage. The project aims at developing an Egyptian HCI living curriculum, in the first instance with a focus on intangible cultural heritage, in partnership with established Higher Education and HCI institutes in UK. An outline for the project activities is described. Further, a call for participation in the project advisory group is presented to the wider HCI community.

**Author Keywords**

Education; curriculum; HCI; Design; Intangible Cultural Heritage; community media production; participatory action research

**ACM Classification Keywords**

K.3 Computers and Education; K.3.2 Computer and Information Science Education;

**Introduction**

The Al-Sirah Al-Hilaliya (the Hilali) is an example of a major living oral epic, protected in Egypt as part of its

## **Thematic Areas**

**Participation:** Characterise and develop community-relevant lived experiences and understandings of ICH from a multi-vocality of perspectives through participatory, collaborative and open digital media design approaches

**Innovation in Practice:** Extend and innovate on the UK HE research and practice approaches and those within computing science education to validate a practical methodology for a ICH Living Curriculum for HE in the Egyptian context

**Sustainable Development:** Establish a transnational advisory group which subsequently helps grow a cross-cultural Hilali Network focused on the interface and scalability between community-driven modes of engagement in the development of living curriculums for ICH and educational reform in Egypt.

adoption of the UNESCO Convention of the Safeguarding of The Intangible Cultural Heritage (ICH) [11]. Since 2007, heritage activity has been concentrated at a broad level (i.e. on Egyptian festivals) where technology use has been limited to the creation of databases rather than tangible tools to support underlying issues of participation. However increased grassroots motivation is seen in the emergence of self-organised groups of cultural heritage 'first aiders' working in at risk areas. Alongside this, Egypt has been slow in recognizing the value of HCI in computing science (CS) Higher Education (HE), attributed to beliefs about strong disciplinary boundaries.

We merge shared interests in the growth and promotion of cultural heritage engagement and HCI education. Through two key phases, the Hilali Network is creating a sustainable network of CS students and teachers, local communities and cultural heritage organisations to preserve ICH using participatory digital technologies. Phase 1 focuses on building common ground facilitated by easy-to-use, freely available tools for digital media ICH content creation and curation. Community driven development of digital artefacts aim to promote increase awareness and translation of the relationship between daily lived experience of ICH and openness to synergies and initiation in ICH innovation nationally and regionally. Phase 2 focuses on building capacity through the development of an ICH living curriculum, a powerful opportunity for reimagining civic education by engaging students with communities on issues of public concern and to increase student employability and international mobility.

## **The Hilali Network**

The network is configured to grow as a self-organised network of key stakeholders facilitated overall by Preston (CHERP) and Lazem (SRTA-City) who are leading its formation and development from dual HCI for higher educational and computing science perspectives. Prof Stone, UNESCO Chair in Cultural Property Protection and Peace (Newcastle University, UK) advises on the development of collaborative and multi-organisational approaches to working with and across local communities in cultural heritage education. Dr Elkington, from the Higher Education Academy, advises into planning for student-community partnerships and mapping out educational principles underling the living curriculum. Our HCI design partner, Open Lab bring skills and a commitment to the design, implementation and evaluation of community-based digital technologies. They provide open source software used for community-based digital media production.

## **Crossing Borders**

Intangible Cultural Heritage is constituted by the local cultural expressions created, maintained and transmitted and constantly re-evolved by communities [3]. There is a natural link between cultural heritage and education, rooted in the common belief that cultural knowledge is passed down from one generation to another. Our work extends this link to include ICH and HCI education in Egypt, as areas which share a vested interest in the appropriation, adaptation and promotion of local cultural knowledge.

### *Preserving and protecting ICH*

Preserving and protecting ICH is an inherently challenging problem as it is created, enacted and

## Community Collaborators

### Local Bedouin communities:

supported to play a key role as both the beneficiaries and creators of the ICH outputs.

### Local university teachers and students based in Alexandria:

supported to play a key role as beneficiaries of the HCI living curriculum.

### International policy makers:

supported in using methods and resources for safe-guarding ICH from UNESCO.

### Local, regional and national Cultural Heritage organisations:

invited to participate in our advisory group and re-mix, adapt open source software developed in the project.

### International researchers in HCI and ICH:

invited to use The Culture Logger, its associated data analytics as well as the ICH thematic review and research papers for multidisciplinary projects.

transmitted between generations. Innovation in digital technology has played a major role in supporting the documentation linked to ICH as web-based material. The sustainability of such approach could be harnessed to its full potential by supporting the participation of community members, developing awareness of the wider society with the value of ICH and building technical capacity of CS students to preserve and present lived ICH. This institutional link straddles three key challenges: the need to protect Egypt's rich ICH alongside its prestigious material archaeological history; the need to support the modernisation of the Egyptian HE system and the need to bring technological advancement in Egypt on a par with global digital economies.

#### *Higher Education reform and practice*

We are directly engaging with Egypt's move to draw on the UK's HE models and current practices. For example, initiatives are growing to modernise heavily technically-oriented approaches to computing science education by sensitizing students to design thinking and contemporary HCI studies [5]. We are developing a sustainable approach through designing an ICH living curriculum informed by HCI, in the first instance aimed at CS students. The project further aims at advocating for HCI education in Egyptian CS Departments.

#### *HCI living curriculum*

We adopt a definition for the living curriculum that "reposition learning as a continuous conversation within a dynamic curriculum that is integrated with, and takes advice from, the world our students live in" [6]. That resonates well with the ethos of HCI education that value the users and their participation in design. We argue that, in the Egyptian context, the development of

the curriculum is an opportunity for reimagining civic education by encouraging students to engage with their communities on issues of public concern. For instance, the socioeconomic impact of recent political changes on tourism, a main source for the Egyptian income. The curriculum aims at engaging CS students in learning about HCI methods through their applications in preserving the ICH of an Egyptian Bedouin community located in Borg El-Arab City. It primarily focuses on participatory design approaches that allow the community to self-document and publish their ICH. The curriculum resources will be available open-source for other HCI educators (nationally and internationally) to adapt and reuse.

Our approach to pedagogical development will be developed incrementally drawing on a range of alternative pedagogies developed for formal and non-formal learning such as Self-Organized Learning Environments (SOLE) [7] based on applications of this in previous collaboration by Preston and Lazem [5, 8]. These minimally invasive approaches provide a flexible space for student as well as teacher development in key areas like facilitation and peer coaching. Our project further consolidates links with partners like the Higher Education Academy in the UK to integrate and explore the intercultural value and application of frameworks like flexible curriculums and students as partners in the co-construction of the curricula [9].

## Project approach and methodology

### *Aims and Objectives*

Our main collaboration media tool, Culture Logger, will remix and adapt Bootlegger [1], a mobile app that scaffolds collaborative creation of multi-camera videos

of live events. Bootlegger builds on existing media workflows and uses new ways of structuring and sharing media content to support alternative and participatory approaches to documentary film practice. These models, including the Bootlegger workflow, leverage professional "blueprints" of media production based on the sequential activities of Commissioning, Pre-Production, Production, Post-Production and Distribution. The Culture Logger will use design principles and key functionality from Bootlegger. The final design (which includes a specific workflow) will be based on its appropriation in the student-community partnerships. We are developing a number of tangible research outputs created in the process of developing approaches, tools for documenting lived ICH:

- Characterising ICH Communities in Borg El-Arab City: A community website (The Hilali Network) hosting locally created audio-visual content and a freely available app (The Culture Logger) used to create them.
- ICH Living Curriculum: a pilot curriculum (content, teaching methods, tools, assessment criteria) for use as part of HCI and cultural heritage HE.
- The Cultural Show, a cross Egypt-UK interactive event showcasing digital ICH media creations through the lens of the community.
- Guidelines for community based researchers reporting perspectives brought by the use of participatory/ reflective technologies to the preservation of ICH and the preservation of cultural heritage in HCI.
- The Hilali Research Strategy detailing next steps for research programme of community-based digital ICH

#### *Participatory action research*

We borrow from the ways in which action research is applied HCI through cycles of Understand-Study-Design-Build-Evaluate-Understand [2]. This methodology is helping us to research and develop culturally appropriate, socially conscious and self-reflexive approaches to technology development.

We involve, and document using ethnographic methods, all stakeholders from the start (rather than 'pushing out' ICH tools once they are produced to communities). We will develop tools to encourage self and peer reflection at the end of each action phase, based on analytics from the technological tools we create, to inform plans for next actions, training needs and to measure progress.

#### **Project Impact**

As a starting point, our participatory methods are designed to support at least 4 community leaders in taking a role in the creation of accessible digital ICH media in Borg El-Arab. In the shorter term, our work is aimed at increasing awareness and translation of lived experience and ICH. In the longer term, we design our engagement processes to promote increased capacity and self-motivation towards the protection and preservation of cultural heritage at a grassroots level across the region b) increased openness to synergies towards regional and national initiatives. The student-community partnership will have established increased engagement with continuing education as the project as students reach out to social groups not traditionally associated with university study.

CS students will be trained in HCI methods as part of workshops with the community. The creation of digital

ICH artefacts and ICH Living Curriculum addresses greater economic development by developing educational approaches to increase capacity (employability, international mobility) in computing science education better addressing local ICH needs. In the longer term, we expect our Digital ICH approach to lead to other collaborations on community driven creation and curation activities. To this end, we invite researchers from HCI as well as sociologists, historians, linguists, storytellers, anthropologists, among others, to join our transnational hub for community driven HE living curriculum developments to support Arab and Africa regions and beyond.

### Acknowledgements

The Hilali Network is funded by The Newton Fund, part of the UK's Official Development Assistance (ODA) commitment, whose primary focus is to develop partner countries research and innovation capacity for long-term sustainable growth.

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