

Report on the outcomes of a Short-Term Scientific Mission¹

Action number: **CA22145**

Grantee name: **Dr Hatice Büber Kaya**

Details of the STSM

Title: Adapting Traditional Games into Digital Educational Mini-Games: A Transferable Suitability Rubric, Adaptation Model, and Generative-AI Scaffolding

Description of the work carried out during the STSM

The STSM was carried out at the Department of Game Development – The Game School, Inland Norway University of Applied Sciences (INN), Campus Hamar, from 10 to 28 September 2026, hosted by Assoc. Prof. Meisam Taheri.

Preparation. Before the visit, the grantee assembled a pool of candidate games from the 518-entry encyclopaedia of traditional games for which the Ministry of Youth and Sports of Türkiye granted research use, and scored the pool with the five-criterion rubric proposed in the application.

Week 1: the rubric. The first sessions tested how the rubric behaved on the corpus. It placed 86% of candidates at 9 or 10 out of 10 and left two criteria constant, so it could not reject a game. A literature map showed that existing frameworks for educational games and for formalising game rules stop short of screening a documented source game before adaptation. We agreed to widen the scope from literacy to education in general, deriving any learning objective from what the game's mechanic can carry, and to replace the total score with a record.

Week 2: the instrument and the pilot. Nine candidate games from three categories (team and contest games, bodily turn-based games, games built before they are played) were analysed in transformation reports. From them we built a non-compensatory selection instrument: three dichotomous gates, an adaptation route assigned by test, five criteria with written level descriptors and anchor games, a transformation ledger stating what each rule element becomes on the target platform, and a platform-conditional question on whether the game's carrying mechanic survives under screen-only, sensor or co-

¹ This report is submitted by the grantee to the Action MC for approval and for claiming payment of the awarded grant. The Grant Awarding Coordinator coordinates the evaluation of this report on behalf of the Action MC and instructs the Grant Holder Manager to verify the grant documents compliance and proceed with the payment.

located interfaces. The host implemented the instrument in a workbench in which a language model drafts a record for each game, quoting the source for every judgement, and a person decides every field. The grantee coded the nine games without consulting the model drafts, and an independent second coder coded them blind, giving a formative pilot of inter-rater agreement.

Week 3: the framework and the papers. From the five games the pilot supported, we derived an adaptation framework and agreed a line of three papers, drafted in the final week and completed remotely afterwards.

Deviations from the working plan. (1) D1 and D2: the scored rubric and scored shortlist were replaced by a record-based instrument and a nine-game pilot with reasoned decisions, because the scoring scheme did not discriminate; the scores of the fifty were withdrawn. (2) D3: instead of worked examples with interface sketches for five to eight games, the adaptation model is stated as a framework derived from five founding exemplars, with interface classes in place of sketches. (3) D4: generative AI was applied to the selection step rather than to adaptive delivery; scaffolding for age- and level-adaptive delivery is postponed. (4) D6 grew from one joint paper to three.

Description of the STSM main achievements and planned follow-up activities

The STSM achieved its central goal, a transferable method for deciding which documented traditional games can be adapted for digital or hybrid play, in a stronger form than planned: the instrument can return a reasoned decision not to adapt, which the original rubric could not.

Outputs. All acknowledge COST Action CA22145.

- **SELECTION:** "Choosing What Not to Adapt: An Instrument That Can Say No Before Traditional Games Are Digitised for Screen or Hybrid Play" (Büber Kaya and Taheri), submitted to Open Research Europe on 6 October 2026.
- **PIPELINE:** the workbench, the formative pilot and the protocol for a 75-game reliability study (Taheri and Büber Kaya); complete, to be submitted to Open Research Europe once SELECTION has its DOI.
- **FRAMEWORK:** the adaptation framework derived from the five founding games; a complete draft, awaiting its application to a validation game outside the founding set, and planned for a special issue associated with the Action.
- **Software:** Carrying Mechanic workbench, version 1.1.0, MIT licence, archived at <https://doi.org/10.5281/zenodo.23005253>. It holds the instrument, the record schema, the workbench, the evaluation code and a synthetic test corpus. The encyclopaedia text and the coded records are not redistributed, in line with the Ministry's authorisation.

Contribution to the Action. WG5 (Education and Dissemination): the instrument and its open software are a reusable resource that any member country can apply to its own documented games, which is what the planned template (D5) was meant to provide. WG2 (Cultural Heritage): each record states what an adaptation keeps, transforms, substitutes or loses, and a game can be set aside for documented reasons, which protects games whose defining competence is bodily or social. WG3 (Automated Game Design): the structured records and the human-in-the-loop workbench give a machine-readable route from a written game description to a design decision. As Türkiye is an Inclusiveness Target Country, the work also brings games documented in the encyclopaedia into the Action's outputs.

Follow-up. The grantee and the host continue as co-authors. Next steps: submit PIPELINE to Open Research Europe and FRAMEWORK is planned to the special issue associated with the Action; Two further studies are planned. One of them will test whether the framework is transferable: Action members

from different countries will be asked to apply it to the traditional game corpora of their own countries in a possible joint project. Plus, one other idea proposed by an Action member to the grantee, which is currently being discussed with the host for a joint paper.