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One Workshop, Two Urban Games: Case Report on Education Models at the Intersection of Dance/Performance Art, Media Art and Game Design

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Abstract

Focusing on urban gaming, performance, and participatory design, this case report presents a network-based education model at the intersection of dance/performance, media art, and game design by showcasing a workshop in June 2011, hosted by the game department at Gotland University (GU), today: Uppsala University/Campus Gotland. The described workshop was organized by GU in collaboration with an interdisciplinary Dance and Media Art Network (DAMA). The network, established in 2005, currently includes educational institutions within the European Nordic and Baltic regions. The workshop’s interdisciplinary character promoted knowledge exchange among students and teachers by providing new innovative approaches to game design. This paper presents the objectives, working process theories involved, and the methodological and pedagogical strategies of the workshop concluding with the presentation of the workshop’s results: Two participatory games developed by the students that were played in everyday surroundings.

1. Introduction

Emergent technologies have opened new possibilities for physical expression in digital domains; however, disembodiment has become common during the growth of new digital cultures highlighting a need to include aesthetics and somatics in cognitive science and highlighting the necessity of knowledge exchange across arts and science via cross-disciplinary courses at all levels of education.

The DAMA network project was established in 2005, initially involving students and teachers from Games Education, Media Art and Dance/Performance Art. The Nordic Council of Ministers’ programme, Nordplus, helped fund the DAMA network that now includes universities and other educational institutions within the European Nordic and Baltic regions. The network aims to offer workshops where students can develop cross-cultural and cross-disciplinary communication and domain-specific skills to bring new media tools and techniques to real-life spaces where scientific theories meet a practice-based approach. Methods applied during the workshops were developed via lessons learned through trial and error, reflecting a phenomenological approach [1] and founded on practice-based creative experimentation, interpretation, and reflection.

Since 2005, the network has expanded from five to 11 participating higher-education institutions, demonstrating in the process the growing demand for cross-disciplinary platforms to meet a “new logic in the non-linear sense” [2]. The output from the workshops has provided new embodied interaction models based on working learning processes that this paper presents in the context of dance/performance art, media art, and game design.

The DAMA workshops generate possibilities that arise when the physical body dictates the design in context of new media art and game design. Mazola et al [3], in relation to the new technology and neuroscience, highlighted the important link between action and perception as “The integral of all the dimensions that define our physiological existence as a space-time of action and perception. It is the global interface with extensional reality of the human existence.” [3]

Considering this scenario, the development of sensor-based technologies has opened avenues for dialogue between the body and digital space, and has uncovered new interest for cross-disciplinary projects and engagements that demand new methods compatible with the ethos of embodied practices, which, in turn, require new approaches and tools. This development points to the need to dissolve boundaries between the cognitive sciences, somatics, and aesthetics [4]. [5]. In effect, the platforms for knowledge exchange across faculties of Fine Arts, Performance Arts, Media Arts, and Computer Science have become the starting point for the DAMA network via cross-disciplinary courses in the form of co-organized workshops. The idea of the network and
workshops illustrates an endeavour to discover new, even experimental, creative opportunities and pedagogical methods, and legitimize them for use in academia. The network is growing, and today participating DAMA members include: Danish National School of Theatre and Contemporary Dance (Denmark), Estonian Academy of Arts (Estonia), Uppsala University/Campus Gotland (Sweden), Iceland Academy of the Arts (Iceland), Malmö University (Sweden), Northern Lithuania College (Lithuania), Riga Teacher Training and Educational Management Academy (Latvia), Tartu University (Estonia), Turku University of Applied Sciences (Finland), the University of Akureyri (Iceland), and the University of Lapland. The coordinating institution is currently the University of Tartu Viljandi Cultural Academy (during the workshop it was the University of Lapland).

The presentation at the Visby workshop, Physical Gaming Performing Space and Media, focused on bringing game concepts to real-life spaces. With creative use of performative actions and new media tools and technologies, two urban games were designed and executed. Students explored various locations and created narratives inspired by the history of the city (Visby) implementing them into the game play as facts and fiction to be unfolded by public participants. These two games were generated on the base of theories adopted from Wilkie’s [6] rules of spatial behaviour in site-specific performance and Kristiansen’s [7] design system for site-specific games (SSG), and combined with the concept of genus loci (i.e., spirit of a place).

The keywords; “cross-cultural”, “interdisciplinary” “process driven”, “site-specific games”, “urban gaming”, “game design”, “dance”, “choreography”, “performance art”, “mobile technology”, “real-live” and “mixed reality”, describe the content of the workshop conducted in Visby. Higher education institutions across the world are offering workshops combining technology with artistic expressions in real live and virtual or mixed-reality environments. However, only a small number of investigated workshops included dance and choreography in combination with some of the above provided search keywords. One is the UKIYO-Networked Virtual Performance Environments workshop, which was a part of a longer research project; a cooperation between Brunel University (UK) and Keio University (Japan). This cross-cultural and interdisciplinary workshop integrated networked technology with dance and choreography exploring choreographical structures in mixed reality environment [8]. In the UKIYO workshop game design was not included as part of explorations, which was however the case in the second workshop example. The Instant Mapping in Rapid Game Design Workshop investigates site-specific games in urban environments combined with mobile and networked technology. The workshop was one in a series of workshops in an educational program for Master of Arts in Design at Zurich University (Switzerland) [9]. The workshop did not contain dance or performative actions; but instead focused on site-specific game design based on sound-scapes data mapped via geo-located audio recordings.

The DAMA workshop in Visby combines several features that differ from the described workshops since all DAMA workshops primarily target undergraduate students. The workshop in Visby, however, combines game design in relation to urban spaces, dance choreography and mobile technology at the same time. The integrated combination of disciplines may appear unconventional, and therefore the aim of this paper is to provide insight into the idea behind it, the working processes and the outputs created based on this cross-disciplinary approach.

2. DAMA Workshops Structure
2.1 Aims
The DAMA workshops comprise several correlated goals described as follows:
- Build creative preconditions for the two cultures; performance art and digital media (dance and theatre + emerging technology) in a creative environment.
- Provide workshops where students can practice cross-cultural and cross-disciplinary communication and exchange domain-specific skills in a new environment.
- Provide conditions for teamwork where participants learn how to work in groups, make positive compromises, and work in multicultural and international environments.

2.2 Methodology
The idea of the body as a vehicle for human perception and consciousness, and the first-person point-of-view of the body is reflected in the philosophical ideas of phenomenology, which Edmund Husserl (1859–1938) introduced to the western world in the early 20th century in the attempt to structure the human experience as a part of the human consciousness.

The method applied during the workshops used a phenomenological approach founded on practice-based creative experimentation, interpretation, and reflection; in other words, a hermeneutical approach to artistic development.

In this case, the ideas of phenomenology are consequently mirrored in an iterative model based on qualitative methods and artistic means.

The hermeneutical approach to artistic development methodology is continuously investigating and discussing, in an iterative manner, each key element of the project in relation
to its own purpose and as an aspect of the completed project [1]. This approach is based on a theory of interpretation and understanding of linguistic expressions [10]. However, in modern philosophy, and in the context of phenomenology as presented by Heidegger via Dreyfus [11], hermeneutic phenomenology “is an interpretation of human beings as essentially self-interpreting.” In this context, the interpretational model allows the extension of the corporeal experience in an investigation that encompasses in the four existential concepts, a Heuristic guide of Phenomenology:

All phenomenological human science research efforts are really explorations into the structures of the human lifeworld, the lived world as experienced in everyday situations and relations. Four fundamental lifeworld themes (or existentials) may be helpful heuristic guides for reflecting on human experiences: lived space (spatiality), lived body (corporeality), lived time (temporality) and lived human relation (relationality or communality) [1] (Figure 1.)

These four existential concepts serve as a model for interpretation and reflection, and addressed frequently during the pedagogical organisation of the workshops and the game design.

developed according to individual teachers’ backgrounds and their fields of knowledge. Teaching methods during the workshop encompass several phases:

Phase 1: For students: Case studies, learning by teaching, demonstrating. For teachers: Panel of experts, lecture with discussion.

Phase 2: For students: Brainstorming, small group discussion, collaboration, and coaching by teachers in an iterative model (Figure 3).


Phase 4: Participatory techniques, group-work, problem solving, learning to make positive compromises.

![Figure 1 Lifeworld Existentials (copied from [1]).](image)

**2.3 Pedagogical approach**

The workshops are practice-based and project-orientated, and built on an iterative series of learning loops where students work in small teams to develop ideas and present a final project during the last days of the workshop (Figure 3).

The role of the participating teachers is to design the workshop curriculum, provide the knowledge base with key lectures, organize practice-based exercises, and guide students individually during the idea development and realisation processes. Participating teachers also assess and provide feedback on the final project.

The preparations for the workshop usually began as an online discussion among participating teachers 3 months before the workshop begins. The framework of the workshops is

![Figure 2 Teaching methods, 4 phases (copied from [16]).](image)

At the beginning of a typical DAMA workshop relevant theoretical background from each discipline is introduced, followed by a description of the workshop outline and discussion on challenges posed by cross-disciplinary teams. The workshops are usually 8 to 12 days in duration wherein the first 2 days serve as a repository of inspirational and theoretical knowledge.

On the second day, tutors introduce their research and their own source inspiration and discuss professional interests. During both introductory days, the relationships between media, technology, movement, space, and time are discussed followed by practical exercises and theory lessons. These preparations are intended to guide students in creating the final teamwork project.

During the second day of the workshop, students are usually divided into groups wherein facilitators try to balance each group with an equal mix of knowledge. The third day is used for small practical exercises and team building, and the fourth day is devoted to idea development. During the remaining time, students develop their final team project, culminating in the final project presentation on the last day of the workshop.

The workshop curriculum is focused on the teamwork process. All projects developed during the workshops are derived from and grounded in teamwork. Each team formulates its own idea around the proposed theme and creates a narrative
entity that builds on culture, attitudes, knowledge, and even fears.

![Diagram of iterative workflow for teams]

Figure 3 Iterative workflow for teams.

Working in a cross-disciplinary team demands a new working manner and attitude from the students that sometimes places pressure on team members in terms of flexibility and willingness to compromise. Therefore, the role of the tutors is important. For instance, when participating in group discussions, tutors provide perspectives that relate to the proposed aims of the artwork and also supply students with tools for negotiation. This part is significant to the goals of the DAMA workshops and perhaps more important than the final artwork. Emphasis is placed on the importance of not fearing failure when trying something new and different instead of safe patterns and methods.

2.4 Evaluation of DAMA workshops

Looking at the statistics received from the survey based on an online questionnaire used by a sample group of 23 DAMA students, the overall student experience of DAMA workshop displayed in the 5-points scale show an average of 4.3 points. The scale in which 1 point = poor-, and 5 points = great experience. The sample group consisted of 52.2 % of media art/technology-, 43.5 % of dance/performance- and 4.3 % of management students. The 95.7 % of survey participants expressed that they gained new skills and knowledge during the DAMA workshop. However, only 60.9% of students stated that they learned new skills and experiences that otherwise may be impossible to learn in theirs ordinary education program. Concurrently, 95.7 % of students find knowledge gained during the DAMA workshop applicable to the subject of theirs ordinary studies. Equally, 95.7% of students indicated that the cross-disciplinary environment increased their ability to come up with new ideas during the DAMA workshops.

To show the new possibilities that arrive by employing a cross-disciplinary approach in an educational context, in this paper, we focus on one of the 15 (to date) DAMA workshops. Mainly, directing the attention on methods and theories adopted from both game design and dance/ performance.

3. The 7th DAMA Workshop, Visby

3.1 Content and participators

The 7th DAMA workshop (June 6-15, 2011) at Gotland University in Visby, Sweden, was organized in advance by participating teachers and coordinated on Gotland in cooperation with the International Office at Gotland University.

The 10-day intensive workshop focused on site-specific games and performative actions designed to move projects from the studio, into the streets, and further into the peripheral rural areas of Visby.

In this scenario, students could develop a crossover between games and performances by applying learned theories. Eleven participating students represented diverse fields such as Games Design, Media Art, Fine Arts, Cultural Management, and Dance/Performance Art.

The following teachers participated: Tomi Knuutila, Lecturer in Digital Media, University of Lapland; Albertina Sparhult, lecturer in Game Development, Gotland University; and Iwona Hrynczenko, lecturer in Narrative, and Time Based Media. During the introductory phase, Professor Steven Bachelder (Institution of Game Design, Technology and Learning, Gotland University) lectured on site-specific art. To establish the main concepts for game design, Albertina Sparhult lectured on location-based games followed by Iwona Hrynczenko’s lecture on site-specific performance theory applied to games.

The content of the workshop was based on action points that combined previously described heuristic guides in context of spatiality, corporeality, temporality, and relationality such as:

- Physical exercises such as movement sequences, goal-directed, expressive-emotional, parallel mirroring, abstract improvisations, rhythmical introvert and extrovert, and communicative gestures in pairs.
- Group trust exercises such as caring, touching, falling, and catching.
- Common semiotics for physical movement descriptions verbalised during the physical movement.
- Simple live (children’s) games indoors and in urban spaces.
- Dance with cameras (seeing body movement through the camera in real-time).
- Camera as a first-person shooter (seeing the space through the camera in real-time).
- Dancing and running with blindfolded eyes.
- Game development theory with a focus on site-specific games.
- Movement sensors, camera tracking, QR-code, mobile phones possibilities, and other technological solutions.
3.2 The knowledge exchange process

During the workshop, the morning tasks usually included physical activities; namely, trust exercises such as caring, touching, falling, and catching; and simple physical games in which body and movement were experienced collectively (Figure 4). Using the physical body and real space, in this case an empty floor of a studio, both students and teachers explored the concept of play based on somatic perception and a limited set of rules.

According to Huizinga, any place can become a playground when a set of rules is introduced, which creates “Temporary worlds within the ordinary world, dedicated to the performance of an act apart” [12]. A state of perception, coined by Huizinga as a “magic circle,” metaphorically describes the characteristics of play based on the idea that, when the rules and the agreement about them enter the playground space, the participants become part of a separate space that they share under playful conditions. These characteristics theoretically constitute the boundaries of the game. Similarly, in convergence with games, Schechner [13] pointed out the social function of a performance, which he related to the possibility of elaboration with rules.

Special rules exist, are formulated, and persist because these activities [games, sports, theatre, and ritual] are something apart from everyday life. A special world is created where people can make the rules, rearrange time, assign value to things, and work for pleasure. [13]

During the first two days of the workshop, ideas, concepts, and theories were presented to build the framework for students to act upon. The game design teachers’ presentations, in this first phase of the workshop, covered the concept of pervasive and ubiquitous games. The first as defined by Montola et al [14] as “…a game that has one or more salient features that expand the contractual magic circle of play socially, spatially, or temporally.” Using this concept, cooperation among players is an important factor for the game play. The second presented model, ubiquitous games, as defined by McGonigal [15] “…replicate the interactive affordances of video and computer games in the real world.”

Here, the focus is on new technology applied via game play to real-live contexts and spaces. The presentation phase introduced core issues of game design and covered other types of games that extend into real-live spaces.

The second lecture explored, both in the classroom and city space, ideas and theories related to the concept of ‘site-specific’ using the scenicographic value of the medieval environment. Consequently, by re-examining the nature of the sites in their real and fictional contexts, the students explored and analysed the concept of spirit of place (genius loci) to find new and unique narrative possibilities.

The game design concepts created by two teams of students were built during several iterations supported by Wilkie’s [6] and Kristiansen’s [7] rule sets based on the theoretical model for site-specific performance presented during the third lecture.

The central part in site-specific performance is the negotiation among the spectators, performance, and site in a process that continuously influence each other. Considering this scenario, Wilkie [6] proposed that, by applying the spatial rules of the performance place, it was possible to find the common denominators and the rules for each of them, which create site-specific performance meanings (Figure 5).

Wilkie’s model for site-specific performance envelopes rules for the site, performance, and spectators upon which Kristiansen [7] developed the site-specific game design concept in which the game play becomes part of the performance. In Kristiansen’s scenario, site, locomotive, and game play performance represent the parameters of the site-specific game; each one with the set based on rules. These are coordinated regarding how spectators (i.e., players) will move in the game (i.e., the locomotion) based on these parameters. Kristiansen proposed a set of questions that signifies the dependencies among all parts (Figure 6).

Applying the theory in practice, Kristiansen’s sets of questions were presented to the students according to the parameters. To define players’ movements in the game the following question was...
asked: How does locomotion make the player progress in the game?

However, the site characteristics affect how players will move; therefore, the next question posed was: How do the characteristics of the site influence players’ movements? To make the correlations visible, a new question was posed: How is site used as game element? In addition, the concept of *genius loci* was explored as an inspirational element for the game design as a reference to the unique atmosphere of a place. Therefore, the students’ assignment was to find the spirits of different places and connect them via a game play.

![Figure 6 Site-Specific Game (SSG) Performance Model (modified from [7]).](image)

During the second day of the workshop, students began discussing game design in working teams of mixed art, dance/performance art, and media art/computer science students. Project-based work, such as content development and technical solutions for various media, was carried out. The projects started to develop; the conceptual work related to the sites produced ideas, which students slowly realized through practical work in the studio.

### 3.3 Workshop outputs

The students’ final projects took different approaches; but all were site-specific placed within the medieval city and its surroundings.

The game play for the first project, *Purganauts* (figure 7), was based on solving minor tasks spread out over five unique locations. Each solved task provided collectable items and hints that lead to the next site. During the game, participating players could collect five capital letters, which, when correctly combined, generated a password for the final site where a dance performance was arranged based on the unique history of the site (a leper sanctuary).

The background story depicted a terrible illness, people dying as a result and existing precautions against it. During the game, the narratives were slowly revealed to players based on the clues. The participating audience thus became detectives, solving the story with the help of physical objects and assignments to receive new information. The clues led participants to a final spectacle inside the old ruins of St Göran Church, part of a 13th century leper hospital.

When played, the game started with finding a letter of the alphabet and a mysterious message in an old-fashioned phone booth placed on the first game site. The players then called a number found in the message to hear a voice that that provided the next clue necessary to find a new site. Using a city map and a paper-made compass, found at the location of the second task, game participants could then orientate themselves toward a new site. In the next scenario, they received fresh instructions to solve a narrative, a visual rebus puzzle to find the street name where they would locate the next clue.

The next site was a section of the medieval wall with a tower extending into a large lawn. There, two participating groups, guided by one of the game’s designed real-life characters, had to select one team member to blindfold. From the tower, the group members then had to shout instructions to help the blindfolded member locate an object on the lawn. The last task was to organize a set of photographs according to their timestamps, and then connect the details in the photos to specific nearby locations to find the correct directions to the final site.

![Figure 7 Purganauts, students’ game, Visby, (copied from [16]).](image)
then rewarded with a dance performance. Following the narratives of the game, all participants (students, local people, and tourists) unknowingly became patients of the medieval hospital—wearing protective masks provided before entering the final location. In the last phase of game, players transitioned into spectators and witnessed a surrealistic pariah dance.

The second group’s location-based game Spill (figure 8), focused on walks in the city, driven by the game play based on short narratives logically tied to the one story leading to the final mission. The seven sites were equipped with QR codes on flyers placed throughout the city containing short parts of the story, and sometimes hidden objects necessary to complete the final mission, the release of the water spirit.

The narratives were communicated through symbols, texts, and QR codes linked to create, for this occasion, a website containing historical information about each place. This information was available via mobile phones with Internet access. The historical information provided keywords that add information to the storyline. The locomotion among the sites was triggered by the directions on the virtual website combined with concise notes that could be received at different locations; in one case from a candy shop intended to include the community in the game. On another occasion, the mysterious message was received from an acting character placed on the city square. The background story was formulated on a rumour that the city was cursed based on the case that citizens had developed a phobia of water. To lift the curse, the players must release the water spirit captured in a pond hidden in the botanic gardens.

The mission could only be accomplished by carrying to the sea a specific quantity of water, accurately measured and mixed with magic essence. To fulfil the mission, the players needed to cooperate since the game only supplied them with one object of each type: the bottle, measuring cup, and the bottle of coloured water, all necessary to accomplish the assignment. In the final stage of the game, players formed a human chain to carry the water to the sea.

When played, flyers placed on city walls and supported by QR codes via mobile phones, rendered more details to the story via the information site.

Participants who moved in several groups were obligated to communicate with each other to connect the different parts of information spread throughout the city, essential steps necessary to find the directions on the virtual map that connected real live posts and hidden objects.

The quest culminated in the botanic gardens with the final assignment to release a water spirit captured in the pond into the sea. This approach created a participatory performance as the players transported the water in a small container to the sea outside of the city’s medieval stonewall. The students’ objective for the game design was to manifest, in a symbolic and practical way, the value of cooperation.

During the last two days of the workshop, projects were publicized by flyers on the city walls and at Gotland University, concluding with several public tours in which the public, often visiting tourists, became game players and interacted in various ways with Visby’s medieval history.

Figure 8 Spill, students’ game, Visby, (copied from [16]).

3.4 Reflections

The DAMA workshops in the past have included many types of final projects ranging from interactive installations, sound art performances, and a range of dance and media performances to participatory experiences. In the Visby workshop, the topic was urban gaming, and student groups developed two unique games. The games were unique not only because of differences in the game logic, but also due to differences in the story lines and the way players followed them. Both games included high levels of audience participation and involved the game designers as performers to some degree. The feedback from students with little or no game design skills was very positive. Based on the surveys free-text answers, the participating students preheated: the open-minded approach, flexibility at work, critical reflection culture and the cross-disciplinary collaboration.

During the workshop, technology was not a point of departure for
the games, yet computing system metaphors, such as password to enter a site, were used as parts of game play. Analogously, implementing the connection to a website via QR codes empowered dance/performance art students to elaborate on computational processes and think in technical terms. In parallel, for media art/computer science students, the contact with the somaticity of the human body and discovering the potential of urban sites as spaces for technology-mediated social interactions provided new perspectives for future work. Most importantly, connecting these two groups of students, usually perceived as opposite sides of knowledge areas, provided new communication skills and encouraging “out of the box” thinking.

6. Conclusion

The development of innovative concepts of real-time actions driven by site-specific game rules was a central theme for the assignments. This was possible by focusing and guiding the creative working process of inter-disciplinary student teams. The approach illustrates a collective experience through a shared encounter, providing a base for knowledge exchange and new pedagogical and artistic methods with the focus on the process, not on final results. The workshops were designed as an iterative series of learning loops where game design, artistic ideas, and knowledge were converted into practice in a short time through intensive teamwork. In this context, the finalised student projects illustrated the developmental potentials of different forms and expressions that evolve from cross-disciplinary environments. The positive results measured both through the positive reactions of invited and coincidental participants during the game-play highlight the potentials of extended perspectives on concept design, ‘interactive affordances’ adapted from computer games [13], and human body in motion augmented via cross-disciplinary elements in education and research. Beyond the opportunity to develop various pedagogical methods, the network-based education models provide students with access to information, skills, and creative connections they would not receive in the framework of an ordinary educational program curriculum.

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