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SKIP

CiAUD
Centro de Investigação em Arquitetura, Urbanismo e Design

fct
Fundação para a Ciência e a Tecnologia

Stimulating Kids for Intergenerational Play

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Keywords
Urban Equipment Design; Intergenerational Games; Children Playgrounds; Outdoor Activities; Healthy Living.

Partner Institutions
1) Cooperativa A Torre; 2) Colégio Avé Maria; 3) Park International School; 4) Colégio Santa Maria.

Expected Future Partner Institutions
Public institutions (city councils and/or parish councils);
Private and public education institutions;
Portuguese companies specializing in furniture and urban equipment and children's sports.

OBJECTIVES

The Main Goal (MG) is to define guidelines for Designing Equipment that will contribute to the increase of physical activity and interaction among generations. The specific goals (SG) are:

SG1 - to identify and classify what has been designed and written on equipment for physical activity promotion, and traditional tridimensional games;

SG2 - to identify good practices within kids physical outdoor activities;

SG3 - to identify Samples for codesigning and validation;

SG4 - to define a Design Brief for this context;

SG5 - to develop Prototypes;

SG6 - to Validate proposed Prototypes;

SG7 - to identify partners for further research;

SG8 - to define guidelines for Designing Equipment for playful intergenerational growth.

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ABSTRACT + IMAGES

Nowadays we have been observing the increase of problems such as children obesity, anxiety and depression, and one of the factors that contribute to these problems is lack of physical activity, and of interaction within their families.

Focusing on lack of physical activity, we have observed that children are often left to play alone, and using technological gadgets for individual use, which increases the identified problem. We believe that contributing towards the increase of social interaction, and physical activity within this specific population (aged 6 to 10) will lead to an improvement of their physical and psychological well-being.

For this, we propose to develop an outdoor furniture system that will promote interaction with children's carers, such as families and educators.

We propose to develop an active research, focusing on four main research phases: i: Research on the State of Art on successful interaction systems within this context, literature review on traditional games and interaction, focusing on pedagogical tools and well-being, crossing with semi-structured interviews with families and educators, that will lead to ii: Identifying the guidelines for Project development; iii: Project development and Prototyping, and finally,iv: testing and validating, near three groups of specialists: families, educators and designers, that will validate three main functional dimensions of the proposal: i) its interaction, ii) its educational value and iii) its innovative character.

The results will lead to a patent registration and to propose and disseminate design guidelines for developing interactive and intergenerational equipment for children.

FIG 1 – Conceptual Diagram of the Research

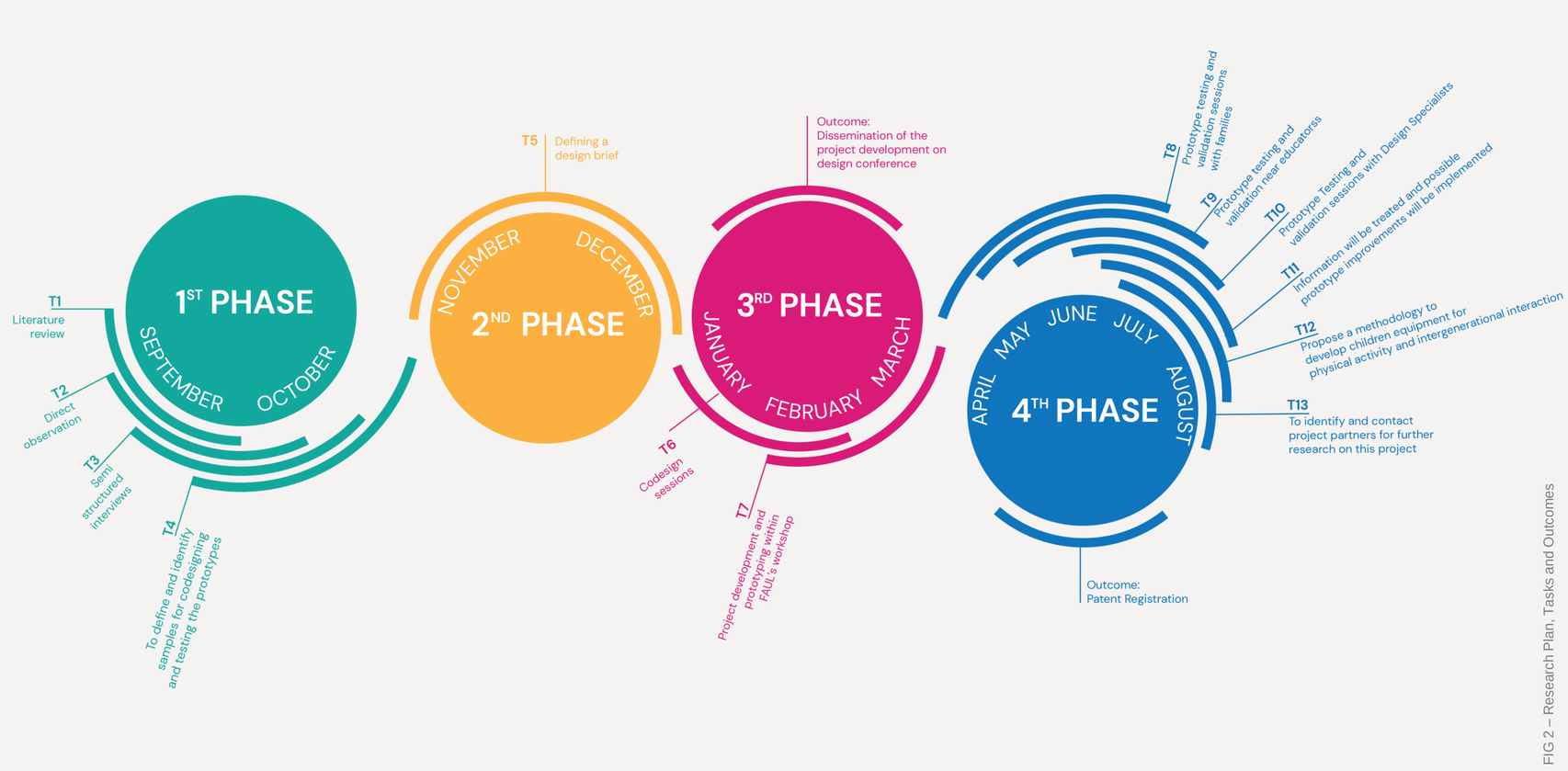

FIG 2 – Research Plan, Tasks and Outcomes

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SCIENTIFIC RELEVANCE FOR THE DISCIPLINE

This research will underline the importance of Design into the improvement of the quality of life, within kids aged 6 to 10, and extending to their families and carers.

The dissemination of the results, namely Guidelines for designing outdoor Equipment, that promote physical activity and interaction among generations, will be a great contribution to the discipline, as it will be a practical design tool.

The cooperation of scientific areas with specialties complementary to the study of product design that cross knowledge and create synergies for future projects.

The participation of the scientific area of design to intensify and consolidate its mission in society.

EXPECTED ECONOMIC AND SOCIAL IMPACT

SKIP aims to develop (Product) Design Strategies that will contribute to increase the life quality of children. Socially, the research will impact on promoting outdoor activities, contradicting the increase of sedentary habits, promoting healthy active living among families.

Another social impact lays on the fact that SKIP will study and develop interaction strategies between different generations, working on inclusive solutions for adult age, until the elderly. Including this age group in the interaction adult sub targets, will also have a great impact on fighting the elderly loneliness.

A prototype and a patent will be deliverables of the research. Following this, we aim to establish partnerships with national outdoor equipment producers that may develop and implement the solutions in the market. Naturally, having Portuguese companies developing innovative equipment solutions, will have an economical impact, hoping to generate more employment and the spread of the Portuguese design as a value to Our economy,

RESEARCH PLAN AND TASKS

This research proposal lays on the Problem, generally observed, and also stated in literature, that is the escalation of the number of children that are lacking in physical outdoor activities, and social interaction with their grown ups, and the consequent increase of obesity, anxiety within this population (1)(2)(3) .

Being so, according to the World Health Organization (2), physical activity is mandatory in this age group, but also extending to all age groups, as we are all becoming sedentary, gaining various health problems.

The goal of this research is to identify guidelines for designing children (aged 6 to 10) equipment that promotes outdoor physical activity and intergenerational interaction. The conceptual framework of the research will cross the Field of Design, with the subject of Playing and with of Health and Well-Being (fig1). To achieve this, we propose to develop an active research that will be organized in four main phases: i) Exploration; ii) Definition; iii) Ideating and Prototyping and iv) Validating and implementing (4).

The following tasks will be organized in 12 months, starting in September 2023 (fig2).

-The first phase, the *Exploration* (4), will focus on the goal of identifying and classifying what has been developed before on kids outdoor equipments for physical activity promotion, and tridimensional games, for this there will be carried on three tasks(T):

T1 - Literature review on the areas of equipment design for children, pedagogical tools, equipment gamification, and collection of existent equipment that may be references for active phase development.

T2- To make direct observation and T3 - semi structured interviews, to families with kids in this age segment and to educators, in order to identify everyday practices and opportunities for interven.

T4 - To define and identify Samples for codesigning and testing the prototypes.

This Phase will be developed, during the 1st and 2nd months of the plan, the the responsible researchers are Paulo Dinis (PD), Cristina Salvador (CS), Fernnanda Driessen (FD) and Mafalda Roque (MR).

- The second phase, the Definition (4)(5), has the goal of defining a Design brief. For this, the previous gathered information that composed the State of Art, (T5) will be synthesized, and directed into defining functional, interactive, ergonomic, pedagogical premisses for designing an equipment for children (aged 6 to 10) that promotes physical activity and intergenerational interaction.

The *Definition* phase will occur during the 3rd and 4th months of the research and the responsible researchers will be PD, Rute Gomes (RG), FD and MR.

The third phase, Ideating and Prototyping, is the active phase where ideas will be generated, filtered and developed (4)(5).

-T6 -There will be carried codesign sessions with previously identified samples of educators and families. The codesign sessions will lead to conceptual equipment proposals.

T7 -.The previous conceptual design ideas, will be filtered into project development and prototyping within FAUL's workshop. This task is dynamic, where improvements will be seeked and applied, in a workshop environment, until a functional prototype is achieved.

This phase will count with the collaboration of two junior designers, who are specializing in this subject of equipment design. One will be responsible for the co-design sessions deliveries video, recording, and data treatment, the second junior designer will be responsible for project development and prototyping in FAUL's workshop.

The Ideation and prototyping phase has as responsible researchers: PD, CS. RG, FD and MR.

. And will occur during the 5th, 6th and 7th month of the research.

- The fourth phase is focused on the prototype testing and validation near the identified samples, each of them will validate distinct dimensions (4)(5). For this, three main tasks will be carried:

T8 - Prototype Testing and validation sessions with families, that will evaluate the proposal general functional dimension and interaction appeal and capacity ;

T9 - Prototype testing and validation near educators, that will evaluate the functional and pedagogical dimension of the proposal;

T10 - Prototype Testing and validation sessions with Design Specialists, that will evaluate the proposal innovation and design achievements.

T11 - Following the testing and validating tasks, information will be treated and possible prototype improvements will be implemented.

T12 - To treat the results, and propose a methodology to develop children equipment for physical activity and intergenerational interaction.

T13 - To identify and contact project partners for further research on this project.

In this Phase the same junior designer that had previously recorded data and treated data from codesign sessions, will be in charge of carrying on with testing and validation sessions, with families and educators. This student here, as before, will deliver the materials, record, and treat data.

The fourth phase of the research will occur from months 8 to 12 of the research. And the responsible researchers will be PD, RG, CS, FD and MR.

EXPECTED SCIENTIFIC RESULTS

To contribute to the Design area, specifically on outdoor playing equipment, focusing on children's segment (aged 6 to 10);

To propose a design methodology for developing solutions for iterating within different generations;

To publish on a scientific design magazine;

To register a patent, for product innovation;

To communicate the research phases results in design research international conferences;

To promote workshops with educators and local governs to aware them to the need of adopting solutions that contribute to the increase of physical activity and intergenerational interaction.

BUDGET: € 7.500,00

Task 6 - "carrying out codesign sessions"- to enroll a junior designer for carrying the sessions, delivering materials, recording and taking notes, and filtering and treating the results. (junior designer) 800€ + (sessions materials)150€ .

Task 7 - Prototype Development - to enroll a junior designer with experience in prototyping, for developing, testing and improving the proposal prototypes. (junior designer) 1600€ + (prototyping materials) 2800€

Task 10 - To contract simulation 3D content, to apply on the testing and validating sessions. A junior designer will be enrolled to develop graphic and tridimensional variations. These materials will be used also for the project dissemination. Junior designer 1200€/ - "for testing and validating sessions" - to enroll a junior designer for carrying out the testing and validating sessions. The designer will deliver the materials, record the sessions, take notes, and deliver and treat the results. (Junior designer) 800€ + session materials 150€ (ideally the junior designer to be enrolled in the codesign sessions, should be the same, pursuing an empathic connection established, and a wider understanding of the research flow.

These expenses will sum the amount of 7500€.