

HOW CAN INNOVATIVE SPACES FOR OUTREACH BE CREATED WITH LIMITED RESOURCES?

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INTRODUCTION

Urban innovations impacting sustainable development also happen in unexpected small spaces, for example when universities open their doors to young people for different outreach activities. These small spaces are places of encounter for scientists and young people, yet their design is often neglected. Especially in engineering and natural sciences, the focus is more on the subject and the tools than on the room and the people in it. Our outreach with robotics team is interdisciplinary (physics, psychology, computer science, architecture, mechanical and electrical engineering, literature science) and diverse (gender, age, backgrounds). In a team where every member is contributing with their field of expertise and talents, our architect noticed the need to adapt the outreach rooms to the young people's needs [1].

How young people perceive an out-of-school activity in a setting where they visit a university to hear about robots is also influenced by how they perceive the space where all this happens. Their behaviour is dependent on five important parameters which define a room and their perception. These parameters are:

- 1.) light
- 2.) acoustic
- 3.) furniture
- 4.) textures & colours and
- 5.) room dimensions.

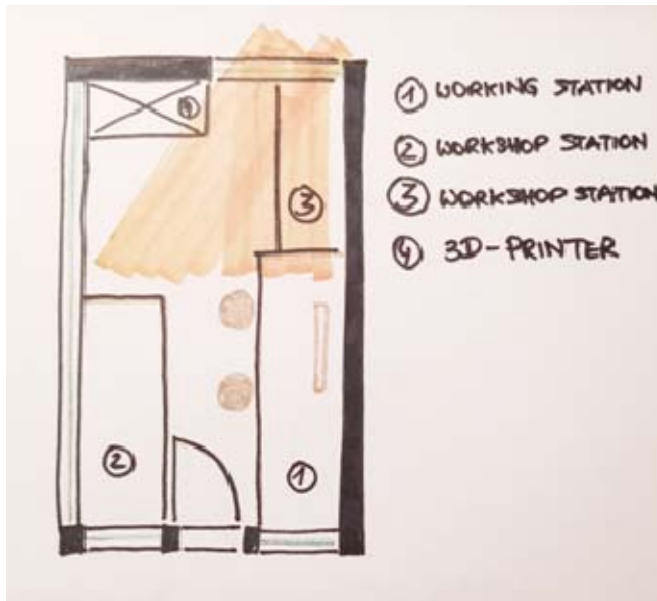
Children need a lot of space to move during outreach activities. And the impression of the room is very important for the children otherwise they feel bored and do not want to be an active part of the workshop. Therefore, the innovator lab needed to be adapted. Since there was no budget for this, the adaptation was done with limited resources.

INNOVATOR LAB

For the workshops with the kids we needed our own room and in this room the kids should not feel crowded. As we started with our workshops we had few opportunities to use it as our workshop rooms. One of our rooms we called "innovator lab", which was at the beginning a room we used as a stockroom. It was not possible to use this for any of our workshops because there was no space left where the children could stand free. Furthermore we needed place where the children could be an active part of it and could try out some tests. Therefore we started to put everything out of the room and cleaned it. Afterwards we measured out the room and reused some of the interior equipments which we carried out of the room. Now we had a room with working places and also a lot of daily light which were not blocked from the huge cupboards. As a further step we started to think about how we could show up our prototypes and results from our workshops. So we arrayed six shelves

symmetrically on the wall above our pin board. On the pin board we designed some posters as an illustration so we were able to explain our projects easier to the children. And after each workshop we watch the children and their behaviour and can decide which changes are still needed.

Below on the illustration and picture it is recognizable that the stockroom is completely dissolved and got a new function of the room. The room gets more daily sunlight because the windows are not covered by any furniture and also this light streams can get through the glazed walls of the room so that the whole hallway can get more sunlight as well. The room is separated in three sections so in the middle of the room, a hallway which leads to the window, is readable. And also a spot between all working stations was developed, so that the children have enough space as well to follow the workshop.



Picture 1: sketch of the floor plan of the innovator lab



Picture 2: situation of the innovator lab

LESSONS LEARNED

During my work with the outreach team in the role as an architect I learned that it is very important to be also able not only to create new spaces and build them, but also think about given resources and reuse them.

CONCLUSION AND OUTLOOK

Children are very inquisitive if you shape your workshops as interesting as possible, they will follow you as well. Therefore it is very important to be in a comfortable place. But is it really that important to be just in an airy and bright room which is big enough to move around? We live in the so called “digital era” and it is also possible to connect our knowledge in architecture with other multimedia, so we can make spaces more interactive and interesting for children. To conclude: schools and other educational institutions are not only places of “enforced encounter” it should also be a place of “playful learning”.

REFERENCES

- [1] Julean, D., 2016. Why Architects See Things Differently An Architectural Approach On Teaching Space Perception, European Scientific Journal, Special Edition, April 2016