International Journal of Academic Pedagogical Research (IJAPR)
ISSN: 2643-9123
Vol. 6 Issue 4, April - 2022, Pages:68-72

Extracurricular creative-educational workshops

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Abstract: *In the article itself, I want to describe the operation of an institution, an organized association or a club, which organization operates in the field of creative and educational content and animation of children. The contents of the work of such organized groups are usually extracurricular, carried out outside the classroom and offer some additional content (above-standard programs) for children in the afternoon or during school holidays. Such organizations are intertwined with local communities, as well as the school that can provide information about children who might need such activities. The contents of the workshops are diverse and relate to technical contents (robotics, modelling, 3d printing, electrical engineering, construction, etc.), as well as, for example, artistic fields (artistic creation). As an example of such an organization, the institute works for the benefit of the dissemination and development of such content among young people and covers all age groups in primary education. Of course, the content and level of difficulty are adjusted to the age group and also to the number of participants in each workshop. In this paper, I would like to present my form of conducting creative and educational workshops within the institute.*

Keywords— institute, creation, technique, art, workshops, extracurricular activities

1. INTRODUCTION

The Izomodel Institute operates in the form of a private institution and is basically a non-profit organization (Figure 1). The world we live in is constantly changing, evolving and with it, of course, the society. Technique and technology has always been and will continue to be a necessity for human existence and survival. An individual as a part of this society must strive to acquire this knowledge to improve the understanding of this content and to be able to use it in his life. Let us ask ourselves, are those who are closer to technical professions and closer to practical skills so much worse than "people in offices", or perhaps they know how to use their potential even much better? If the answer to that question was yes, then we know where to start - with children. Yes, it starts at an early age, with play, research, the first experience of designing materials, using tools, creative search for solutions, etc. This is why such workshops are suitable for children and give children what they really need [7].

Fig. 1. *Izomodel Institute logo*

2. PRESENTATION OF THE INSTITUTE

Through play and research, the child gains experience in the field of designing materials, using tools and acquiring technical knowledge. Above all, he develops creativity and the ability to solve problems. The institute's workshops also develop motivation and guidance for a possible path of choosing a profession in the technical field. The workshops are conducted with the help of the top didactic kits adapted to age groups (difficulty level). The workshops are led by pedagogical staff with many years of experience in teaching such content. 100% of safety at work is taken care of, as materials and tools and accessories are the product of world's famous manufacturers in this field, with all the certificates. In addition to all educational content, the socialization and protection of children is also important here [7].

Age groups of workshops izoMODEL

age 6-9 years **age 9-11 years** **age 12-15 years**

Fig. 2. *Presentation of age groups within the workshops*

Groups or difficulty levels are roughly set (Figure 2). The issue is tailored to the individual. It is possible to combine different levels of difficulty in one group. The maximum number is 15 students in a group.

3. PRESENTATION OF THE CONTENTS OF THE INSTITUTION'S WORKSHOPS

The contents of the workshops are diverse and relate to technical contents (robotics, modelling, 3d printing, electrical engineering, construction, etc.), as well as, for example, artistic fields (artistic creation). As an example of such an organization, the Institute works for the benefit of disseminating and developing such content among young people. In the following, I present the following contents of workshops.

Fig. 3. *Modelling workshop*

In the field of modelling, many vessels or vehicles can be built in workshops (Figure 3). The essence of such workshops is that the child gets acquainted with the plans and technical documentation to be able to use this documentation and to create a specific model with the help of this documentation. Models can be airplanes, ships, sailboats, cars, etc. However, they can also create only a model, which, unlike the model, cannot be used or it can be non-functional and serves only for collecting or decorating. These contents are related to the curriculum in the subject of Fine arts [3] and elective subjects of Fine arts design [6] and Processing of materials [5].

In construction workshops (Figure 4), the child encounters the simplest models, with the help of which he researches the issue of statics in technology. The models consist of Fishertechnik kits. These collections are also related to the field of mechanics.

Fig.5. *Robotics workshop*

Robotics workshops (Figure 5) offer an insight into the structure of a robot, its operation in terms of how we can assign a task to a robot. At this stage, the child encounters the basic steps of programming. For such programming, we need a customized program offered by the companies themselves, which also make robots as didactic aids for children. The contents are related to the curriculum in the elective subject Electronics with Robotics and Electrical Engineering [2].

Fig.6. *3d modeling workshop*

Another area that is very widespread in the modern world is 3d printing. It relates to the previously presented areas, which can also be intertwined. In workshops (Figure 6), for example, a child can draw a component for a robot and print it with a 3D printer or a part for an airplane model, inside a modelling workshop, etc. Thus, in the optional subject Drawing in Geometry and Technology [1], children can learn the basics of digital drawing of 3D shapes and upgrade these skills within such workshops.

Fig. 7. *Art workshop*

Finally, I would like to present workshops from artistic creation (Figure 7), where the content is slightly different. In the workshops, children learn about various art techniques, materials and look for art solutions for the motif they are interested in. The essence of the workshops is that the art technique, motif and other working conditions are adapted to each individual according to his age, prior knowledge and abilities. All these contents are related to the curriculum in the subject of Fine arts [3] and, according to the adaptations of the work to the individual, it is a kind of above-standard work program.

4. CONDUCT OF WORKSHOPS

As these are extracurricular creative-educational workshops, the time of the workshops is appropriately planned. Workshops are held in the afternoon during the school year or in the morning, on weekends and school holidays. The figure below (Figure 8) shows an example of a digital application form filled in by the parent of the child they wish to register for the workshop. This application form is on the website of the institution itself, where there is also all other necessary information about workshops for parents (workshop content, location and time of the workshop, etc.). The institute is also promoted with its content with the help of social media, such as Facebook and Instagram.

Fig. 8. *Procedure for registering for the workshop using the online application form*

Below I present some excerpts from different workshops.

Fig. 9. *Demonstration of a robotics workshop*

The picture above (Figure 9) shows an example of a workshop for children in the field of robotics. In this case, it was a workshop for children aged 9 to 11, classified into a group with some prior knowledge in this field, as they have already encountered these contents. Work was done with LEGO Wedo 2 kits, and the workshop lasted 3 hours, during the school holidays.

Fig. 10. *Demonstration of a modelling workshop*

Figure 10 shows an example of a modelling workshop. In this case, it was children aged 6 to 9 who have not yet encountered this area. A beginner glider was built according to plan. The workshop lasted 3 hours, during the school holidays.

Fig. 11. *Demonstration of a 3D printing workshop*

The picture above (Figure 11) shows an excerpt from a 3D printing workshop. At the workshop, which was designed for children aged 12 to 15, the children assembled a 3D printer (with the help of the Fischertechnik kit) and tried to print a smaller product with it.

The institute itself also offers various art competitions, such as the international isoCREATION competition (Figure 10), which in 2020 connected individual primary schools from 4 countries (Bulgaria, Ukraine, Austria and Slovenia). These schools produced works of art on the announced theme of the competition and thus somehow showed a unique approach to solving an individual art problem.

Fig. 12. *Excerpt from the catalog of the international art competition izoCREATION 2020*

5. CONCLUSION

The institute, as a private organized activity, can take advantage of the possibility of carrying out extracurricular activities for children, within its creative and educational content. The Institute can also apply for various tenders prepared by the municipality or state and represent some financial support for the development of the activities of the institute. In this way, the basic mission of this non-profit organization can be expanded. This mission, however, is to enable young people to become acquainted with the modern technical fields mentioned in the previous chapters or to develop only creativity in the field of art.

6. LITERATURE

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7. SOURCES OF PICTORIAL METERIAL

Figure 1: Izomodel Institute logo (https://www.izomodel.si/, obtained 5.4.2022)

Figure 2: Presentation of age groups within the workshops (https://www.izomodel.si/program-zavoda/, obtained 5.4.2022)

Figure 3-7 (https://www.izomodel.si/vec-o-delavnicah/, obtained 5.4.2022)

Figure 8: Procedure for registering for the workshop using the online application form (https://www.izomodel.si/prijava-na-delavnico/, obtained 5.4.2022)