

e-mentor

Number 4 (76) 2018

ISSN 1731-6758



Special issue on:

- Children universities
- Learning by doing
- Non-formal education
- Learning in natural environment

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e-mentor

printed version
of the open access academic journal
e-mentor.edu.pl

Publishers:

SGH Warsaw School of Economics
&
Foundation for the Promotion
and Accreditation
of Economic Education

ISSN 1731-6758

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*Journal with (15) points awarded by Poland's
Ministry of Science and Higher Education.
Scientific articles are peer reviewed.*

Print: 1000



Dear E-mentor readers,

We continue to publish the international version of E-mentor journal entirely in English. The newest one is a special edition aimed at presenting various initiatives reflecting the non-standard approach to teaching and learning of children and youth. It includes the articles collected during the pilot study carried out by the Center for Open Education at SGH Warsaw School of Economics. The pilot is part of a project which aims at investigating how contemporary education of young generation is changing in response to the growing needs of knowledge-based societies.

The study started with focusing on children universities – what are their profiles, the most popular models of organization, and whether or not they succeed in their efforts. Several papers referring to the general concepts underlying the work of children's universities constitute the first part of the journal.

In the second part, we present chosen examples of good practices. The intent is to show possibly a broad spectrum of 'specializations' of such universities with a particular emphasis on those less commonly met such as economic, health and medical science or history education, multilingual university classes or the initiative teaching with art.

During the first stage of the research, we also managed to identify some other examples of extra-curricular ways of teaching children and youth. One of them is makers movement – in the current issue, we included a brief report from the European project MakeAppClub only as an example. The topic is to be studied more closely at the later stage of the project. The other approach worth to mention (and to research further) is the 'education in nature' movement – we refer to a few such initiatives from Poland and the US as well.

Some papers originate from the presentations delivered during the 5th Congress of Children's Universities, held in Warsaw in May 2018. The authors of some others were invited to share their experience gained either throughout the projects they realized or the initiatives of a local community. I particularly appreciate the paper written by colleagues from Canada – a team of prof. Sandeep Raha, who willingly responded to my invitation. The McMaster Children and Youth University (MCYU) is an excellent example of successful collaboration not only with families of young students but also with local schools and community-based organizations.

We do hope that the attempts to broaden access to the valuable content of our journal will correspond with the expectations of our readers and the potential contributors as well. In 2019 we plan to continue issuing E-mentor journal in English as well. Researchers and teachers from HE institutions interested in publishing with E-mentor may refer to the brief guide for authors published on the last but one page of the journal. More detailed instructions and the submission form can be found online at: http://www.e-mentor.edu.pl/eng/page/8/Info_for_Authors.



Maria Zajac
Editor



Ministerstwo Nauki
i Szkolnictwa Wyższego

„Zwiększenie liczby artykułów w języku angielskim publikowanych w czasopiśmie E-mentor” – zadanie finansowane w ramach umowy nr 748/P-DUN/2017 ze środków Ministra Nauki i Szkolnictwa Wyższego przeznaczonych na działalność upowszechniającą naukę.



Ministry of Science
and Higher Education
Republic of Poland

“Increasing the number of articles published in English in the E-mentor journal” – a task financed under the agreement No. 748/P-DUN/2017 from the funds of the Minister of Science and Higher Education in Poland designated for the dissemination of research and science achievements.

The children university model and beyond – a pilot study

Maria Zajac*

SGH Warsaw School of Economics was the first location of the Children's University of Economics established by the Foundation for the Promotion and Accreditation of Academic Education (FPAKE) in 2008. At present, it coordinates the activity of CUE (pl. EUD) in seven academic centers around Poland as well as the operation of the Academy of Young Economist in its six locations. SGH is also the place of annual meetings of the Association of Children's Universities in Poland and the Congress of Children's Universities. Such an active involvement established a natural background for the research project on the extra-curricular children education in general and the activity of children's universities in particular.

Introduction

The idea of organizing academic classes for young learners originated in the German city Tübingen in 2002. Since then it spread widely out – all over the world. No exact data on the number of existing children's universities are available, but the search over that internet proved that they operate in many countries on different continents. During the pilot study, we managed to identify examples of such initiatives in North America (Canada, US), in South America (Brazil, Peru), in Asia (China, India¹), in Africa (Egypt), in Australia and numerous European countries. On the official website of the European Children's Universities Network² the total number of over 350 locations in more than 40 countries worldwide is indicated. However, it is not clear how up to date and how complete these data are. On the other hand, in the Public Member Directory³ of EUCU.net there are 81 such children universities registered.

The overview of the already operating initiatives shows that this phenomenon is changing dynamically.

Some new instances appear while the others – especially those created within the scope of various project stop their actions because of the lack of funding. The proper estimation of the number of CUs is even more difficult because some initiatives combine numerous entities. There are groups which have its units in different cities like for instance UniKids or Polish Academy of Children. The first one operates in 31 places around Poland, whereas the second in 21 locations, including the Polish 'branch' in Amsterdam, Holland⁴. Also, some universities coordinate actions on the same subject area delivered in different locations, e.g., Children's University of Economics coordinated by SGH in 7 sites.

Methodology of the pilot study

It is worth to stress that the aim of the pilot was mostly a recognition of the subject. In the beginning, we attempted to find the answers to some general questions. How broad is the reach of such initiatives? What data is available and where? Whom can we contact to obtain the necessary information? Therefore, the primary source was the internet search, the individual mail contacts with the leaders of local initiatives as well as the presentations from the meetings or seminars on the extra-curricular children education. Altogether we visited and analyzed 30 websites (in Polish, English, German, Spanish, and Portuguese), contacted via e-mail 15 university leaders and carried out two individual interviews. The first and most straightforward conclusion from that study is that there is such a variety of ideas worth sharing that the research should be continued, and its results made publicly available.

* SGH Warsaw School of Economics

¹ This university although having the name Children's University seem to play a different role, than other initiatives described in this publication (<http://www.cugujarat.ac.in/Index>)

² <https://eucu.net>

³ <https://eucu.net/page-808561>

⁴ <https://padholandia.wordpress.com>

The children university model and beyond – a pilot study

Study questions and initial findings

During the pilot study three questions became the focus of our attention:

- What are the most common children's university models?
- How are the children's universities organized?
- What subjects do they cover?

Our goal was to collect data that would allow identifying various concepts applied by the children's universities in different countries as a preliminary stage for further, more in-depth research.

Models

First of all, one may observe that many initiatives follow the 'German model,' i.e., the participants of the lectures are children and youth aged 6–13, with some variations like 5–12, 7–14 and alike. The most common organizing body is the university, although the actual spectrum of other institutional initiators is quite broad, like for instance the science centers, the local community authorities, the school or library or even individual teachers passionate about enhancing the students' possibilities to develop their interests. The latter was the case in one of the Polish rural schools where the teacher alone initiated the extra-curricular classes and, in this way, tried to convince parents, the local community as well as the private university in the neighboring city that the kids need such kind of support.

A slightly different (or modified) approach one can find in the 'British model', which could be met mostly in the UK and in Australia, although its followers can be found in other countries as well.

The form of the meetings

- The most commonly observed form of participation in the children university classes is lectures and workshops. Usually, the university staff is engaged but there are also initiatives in which children become the lecturers (some Austrian examples, and in Poland the CUs associated with the Polish Academy of Children⁵, e.g., Maly Medyk project presented in this issue).
- There are initiatives which include less traditional forms like outside activities to be described in the *Places* section later in this article.
- Children also can record their questions to the scientist and place them on the university portal (e.g., Brazilian Children University from Belo Horizonte⁶).
- There are also examples of incorporating the in-the-city tasks as it is the case at the MCYU operating in Hamilton, Canada (the paper belongs to this issue as well).

Participants

- Very often the classes for children are accompanied by the meetings or lectures for their parents or caregivers.
- Also, the involvement of volunteers recruited among the 'regular' university students is quite common in the analyzed children's universities.
- In some initiatives, the groups of participants are recruited among schools and then the teachers also take part in the classes. Moreover, they continue the tasks during the school classes. Such approach one can observe in the Australian or British children universities, and among the Polish initiatives like Maly Medyk project for instance.
- The Canadian example of MCYU also shows the involvement of local organizations, community members and school boards, and the whole families that complete the given tasks together.
- In some institutions, the whole cohort of students participates in the classes together but in some others, the learners belong to different groups depending on their age, and the tasks are adjusted to those groups. The Children University of Interesting History can serve as an example here – students may belong to the group of Observers, Explorers, Discoverers, Travelers, and Creators respectively (a case study provided in the article illustrates how the tasks the students get correspond to their age group).

Funding and fees

There are four typical sources of funding the activity of children's universities, and their share is unequal. These are:

- the universities own money;
- grants established by the public bodies like government, local authorities, charities;
- international and national projects and grants;
- fees paid by the participants.

It must be stressed, however, that even if the fee is mandatory, it is usually a small amount of money, established taking into consideration that it cannot prevent the young learners from participation in the children's university classes. In many universities, students do not have to pay any fee.

Places

The most common places for the classes are universities – their lecture halls, scientific and research labs and workshop spaces. However, the learning does not have to be limited to the university campus. Numerous examples can be indicated to prove that

⁵ <http://academyofkidspoland.wixsite.com/polskaakademiazdzieci>

⁶ <http://www.universidadedascrianças.org/#projeto>

statement. These can be ‘workshops in the city’ which are part of Canadian MCYU program. The classes can also be delivered on the theater stages or dance halls when they include drama and dance. In the model implemented by the British and Australian Universities the concept of so-called learning destination is applied. The term refers to such places as galleries and museums, landmarks, historical sites and properties, zoos, wildlife and countryside locations and many others. At the beginning of every semester or series of classes student gets the learning passport, a little book where they collect the stamps every time, they accomplish a particular activity.

It is worth to mention in this context that the indicated places also organize the educational activities and projects on their own. For instance, the National Museum in Cracow implements the project MAMBA – the acronym of which comes from the Polish name Mała Ambasada Muzealna and can be translated into English as Little Embassy of Museum. Within the scope of the project children aged 6 to 13 attend a one-semester preparatory course, familiarize with the chosen artists and their artworks to eventually play the role of an exhibition guide in the museum.

Graduation and the follow-up

Collecting the stamps or the lecturers’ signatures in the students’ pass is the typical form of confirming the completion of classes at the children’s universities. Most universities establish the specific amount of such stamps required for being eligible to get a diploma at the end of an academic year or holiday course. In some institutions, there are also final tests. However, their role is not to evaluate the children’s knowledge but to award the most active or most diligent students instead. In some institutions, students graduating from the children’s university may continue their learning path and step on the next level of their education as it is the case at SGH for instance. The Academy of Young Economist is the follow-up of the Children’s University of Economics although its completion is not a requirement. One may start the AYE not being previously a student of CUE.

Another example of how to motivate young people to continue their adventure with the university are different levels of certificates. For instance, the MCYU offers three types of completion certificates – a Certificate of Knowledge, Bachelor of Knowledge and a Master of Knowledge diplomas (more details in the MCYU paper).

In turn, the Children University Foundation offers different specializations corresponding to the age of students – the topics of the classes depend on the group characterized by the action-name, i.e., Discovery (6–7 years), Inspiration (8–9 years), Understanding

(10–11 years), Master and Apprentice (12–13 years), Developing a passion (14–16 years)⁷.

Other forms of non-formal education

The described pilot study also drew our attention to other forms of non-formal education. We decided to present some of them in the current edition of e-mentor as we believe that they represent significant trends, which emerged in response to the challenges of contemporary education.

Makers movement

The first example – makers movement – arose from the individual attempts of people who wanted to find either a space or a companion for developing their passions and hobbies. The makerspaces became very popular in some countries (e.g., in the UK and US), but in many others, the makers movement is still at the very early stage, what is also the case in Poland. The brief report included in this issue based on the research carried out by the British and Polish educators underlines particularly one aspect of the makers movement. It is the role of mentors in young people’s education. The study based on the biographical research methodology allowed to collect data confirming that *school is not enough* and that *the role of mentors in extra-curricular establishments is crucial for young people to progress*. This particular report refers to the study on developing the digital skills of young learners, but the makers movement is worth to be studied more in depth because of its significance for many areas of education. The purpose why we mention it here is to illustrate one of the possible directions of further research.

Education in nature

Another vital aspect of contemporary education is the children’s limited contact with the natural environment. Anna Komorowska quotes in her paper the term ‘nature- deficit disorder’ coined by Richard Louv⁸ and describes several initiatives aimed at bringing children and the whole families closer to nature.

In the described pilot study, we managed to collect only a few examples from Poland and the US, but the assumption that similar efforts are undertaken in other countries seems to be fully justified. Hence, further research on this issue is necessary as well. For example, a closer look at Scandinavian countries, known from their still popular practices of spending time outside seems to be a promising direction.

When to start children’s education?

The American example of learning in nature – Tinkergarten⁹ – is called by its founders Megan and Brian Fitzgerald ‘the healthiest classroom of all’. The reason

⁷ The names of the specializations translated by the author.

⁸ <http://richardlouv.com/about/>

⁹ <https://tinkergarten.com>

The children university model and beyond – a pilot study

for starting the initiative was the same as mentioned above – to prevent the nature deficit by providing *a play-based early learning program to children aged one through eight and their parents or caregivers in local parks and green spaces across the country*¹⁰.

In Autumn 2018 Tinkergarten started classes even for babies aged 6–18 months. The curriculum expands along with the children growing up, and its founders claim that they would like to serve people ages 0–100+ because they see such needs. It is highly likely that initiatives like this will be in focus of research in the very near future.

Conclusions

The idea for our study originated from the interest in the activities of children universities. However, it soon started to evolve into much broader research which should be continued. Therefore, presented observations and ideas constitute only the introductory overview of the subject.

This final section of the paper aims to outline some regularities observed:

- Generally, two approaches named in this report, the German model (originated in Tübingen in 2002) and the British model coexist. The first one has been adopted by many European countries (apart from the UK), whereas the second dominates in the UK and also in Australia and some Asian countries. Some CU operate even in a mixed model, i.e., some elements of action like university lectures, for instance, are borrowed from the German concept, while the others, e.g., the ‘in the city workshops’ from the British model;
- The universities based on the British model have a common body – the Children University Trust. In the UK it is the National University Trust whereas the University of Adelaide in South

Australia coordinates the so-called Australasia Children’s University. The common feature of the universities belonging to the Trust is the same approach to teaching and learning;

- In Europe, the European Children’s Universities Network (EUCU.net) has been established first in 2008 as a part of the EU funded project, and in 2011 it started to operate as an independent body. Children’s universities associated with EUCU operate independently – the network plays a role of the experience exchange platform; Some universities from other continents (both Americas and Africa) have joined it as well.
- In the German models – usually (although not always) universities are the centers of learning and children individually join the university while in the British model – the university cooperates with schools. It is possible to enter the CU individually, but it must be agreed in every case separately and depends on the possibility to manage that;
- The vital part of non-formal education in recent years become the outdoor classes – in Europe, they are mostly individual movements, while in the US some country-wide initiatives like Tinkergarten exist. What they have in common is the active involvement of parents in children’s education – they not only participate with their children in outdoor activities but become the leaders of classes as well;

Last but not least – the characteristic feature of all the initiatives mentioned in this report is paying attention to stimulating children’s curiosity and imagination, to ‘waking up’ their awareness about the beauty and richness of the world around them and making them passionate about discovering it. That is a significant response to the challenges that the education systems worldwide face nowadays.

¹⁰ <https://www.childrenandnature.org/2018/05/03/not-just-tinking-around-the-story-of-tinkergarten/>

Maria Zajac, Ph.D., graduated in computer science from the Jagiellonian University in Cracow. She spent almost 30 years teaching at the university. Passionate about the effective use of ICT in education became fond of e-learning as soon as it appeared in mid-nineties of the twentieth century. For many years served as an e-learning expert and teaching advisor, at the same time researching the challenges that contemporary education faces and the role the technology may play to improve it. Collaborated with E-mentor academic journal since 2004, in 2016 took over the responsibility for the editorial office. Strongly believes that one can learn any time and any place and that learning may be fun.

the role of partnerships in delivering a children's university program: a case study of the McMaster Children and Youth University



Krista Paquin* Beth Levinson**



J. Marshall Beier* Sandeep Raha**

The McMaster Children and Youth University (MCYU) represents an educational outreach program based in Hamilton, Ontario Canada that has been built on the basis of partnerships with local organizations, school boards, and families. The MCYU also incorporates the training of the University students to the extent of knowledge communication to affect the program delivery. Consequently, this approach has resulted in the delivery of the program which consists of on-campus lectures and community-based workshops, which have demonstrated consistent growth over the last 7 years.

The McMaster Children and Youth University (MCYU): The Vision

The McMaster Children and Youth University (MCYU) was founded in 2011 in Hamilton Ontario, Canada, and represents the first Children's University Program in Canada. The MCYU is based on the model originally developed in Tübingen, Germany, where children are invited to experience lectures delivered by University Professors, both on-campus and in the community. The MCYU is similar to many European Children's University models that focus primarily on children's experience. However, the MCYU has uniquely adapted that concept to include a family-based learning and educational component. Holistically, the MCYU represents an educational program with a vision to reimagine both the elementary and post-secondary experience through the creation of innovative educational and pedagogical practices that aim to improve student-learning opportunities. Bringing together these two groups of learners in a unique partnership has resulted in some innovative practices for the MCYU which are guided by the belief that such partnerships of the university, public schools, families, and communities may foster the academic success of students. Central to this belief is that the youth who attend our program are bona fide bearers of knowledge and have a valuable contribution to be considered in advancing the scientific and social underpinnings of our society; and should

also be identified as producers of knowledge. For this reason, we have worked to establish partnerships with schools, parents and community-based organizations, including the City of Hamilton and its agencies to collaboratively enhance the learning experience for both the University students and middle school aged children (grades 4–8). However, the primary partners in such a co-creative effort are the youth in the community and their families along with undergraduate and graduate student volunteers (facilitators).

The MCYU: Delivering a Multidisciplinary Educational Program

The MCYU focuses on the development of strong multidisciplinary partnerships in its approaches to education, learning, and practical implementation of its programming. For this reason, the topics addressed by our program encompass a broad range of disciplines covering Science, Technology, Engineering, Arts and Mathematics (STEAM). Ultimately, our long-term goal is to encourage critical thought and problem solving, and to encourage more engaged citizenship for all who participate in the program, including the MCYU student facilitators, the faculty, and the community youth. Towards this end, the MCYU has trademarked the slogan *Question Discover Create; question your environment, discover your potential, and create a brighter future*. This trademark now serves as the credo for all of the MCYU's programming and has become an iconic program logo. However, this slogan has become more than just a trademark: the youth can identify it as a series of actions and all of our programming elements may be categorized under all three of these words. Therefore, it not only serves as a guide for those who attend the program but also an outline for our MCYU workshop facilitators when developing the content and activities for each of the workshops.

The MCYU program¹ consists of two components offering two different types of experience which reflect the post-secondary environment:

* Okanagan College and Thompson Rivers University

** McMaster University

¹ more information about the program may be obtained at www.mcyu.ca

The Role of Partnerships in Delivering a Children's University...

1. The MCYU Workshops in the City

Our community outreach component strives to engage the youth and their families in the communities where they live. These interactive workshops are one hour in duration and are delivered using an inquiry-based learning approach (IBL). By means of keeping with the philosophy of co-creation, the topics of these workshops are developed in conversation with our community organizations including public schools and the City of Hamilton Community Developers. This branch of the program focuses specifically on the community's identified needs and concerns, which are then aligned with areas of expertise within the McMaster University community. This discussion defines current topics of interest to the public, and the way in which these conversations unfold is an important learning point for all of the MCYU student facilitators. This strategy of workshop development results in interactive workshops that have proven to be very synergistic with the elementary school curriculum making them popular with the youth who participate and also with parents and teachers. The titles of these workshops are designed to be appealing to the youth, for example *Contagion* was a workshop to teach the youth virus biology so that they could apply their knowledge to build a 'zombie virus' (a super virus); *Advocacy Avengers* – was a workshop designed to promote civic engagement among the youth; and *Community Builders* – was a workshop to teach the youth how to design an ideal community where they would like to live. These workshops are primarily deployed in the Hamilton Wentworth District School Board (HWDSB), grades 4–8. In many cases, teachers select the workshop topics that supplement and align within the curriculum that the class is studying at the current time. The MCYU staff rigorously review the design and content of each workshop and this preparation is appreciated by the parents who bring their children to the program. When asked to compare the MCYU in the City workshops to other workshops her son had attended, one parent commented:

The other difference was the MCYU sessions were presented with a real-life situations/problem which the kids were supposed to solve or come up with a solution for.

2015, A.G.

The experience of this parent and her child reflects the MCYU's commitment to deep learning through inquiry. The youth are exposed to new content but more importantly are given the opportunity to discover and create new knowledge. This is what the parent is referencing – *this opportunity for students to practice being problem solvers in this instance* – rather than mere receptacles for information. In this way, the youth who participate in the MCYU workshops learn new ways to learn. This is a skill that builds lifelong learning that may help them to visualize

their future as students and on their career paths. This applied form of learning has long been known to be effective (Christenson, Reschly et al., 2008), but has not always been applied at lower academic levels. One of the stated objectives of the MCYU workshops is to collaborate with the Hamilton Wentworth District School Board (HWDSB) to provide an increased number of opportunities for the youth to participate in this type of deep learning that demonstrates the value of their schoolwork, and connects them with ways that these skills may impact their community and helps them to visualize future career paths.

2. The MCYU On-Campus Lectures

These types of experience provide opportunities for the youth and their families to explore the university environment with a view to break down some of the perceived barriers to pursuing a post-secondary education. The youth and their families attend monthly lectures delivered by the University faculty recruited from across all the six of McMaster University's Faculties (Business, Engineering, Health Sciences, Humanities, Science, Social Sciences). This interdisciplinary range of speakers serves to maintain our STEAM-related content. The specific topics are selected based on our faculty's area of expertise and, with the assistance of the MCYU program staff, the titles are shaped to ensure that the youth and their families will find them engaging. For example, an ecologist delivered a lecture entitled *'Movie monsters: The truth behind our wildest imaginations'*. This speaker focused on insect biology and how Hollywood film makers exploit insect physiology to create movie monsters. Other titles include *'Sweat so you don't forget'* – a lecture to describe how exercise improves cognitive function; *'Why dinosaurs don't throw snow balls'* – a lecture about the climate change; *'What your poo says about you'* – a lecture about the human microbiome; *'18th Century Literature Superheroes'* – a lecture about how boys and girls were depicted as heroes in 18th century designed to empower the youth in the civic engagement.

Our speakers are provided direction to ensure the content is family-oriented and interactive. The most engaging discussions occur when lecturers describe the unfolding of decisions surrounding their career path choices. This allows the youth to connect more closely with the faculty, opens up questions, and serves to reduce some of the apprehension that may be associated with the University environment for these families. The youth enjoy hearing these stories and many of the discussions during the question period stem from inquiries around the faculty members' career choices. Overall, we have found the question period very revealing as to the abilities of the young minds who attend the lectures. One comment, that has been consistently expressed by every faculty mem-

ber who has spoken in this forum, is their surprise at the depth and diversity of the inquiry expressed by the youth, some as young as 6 years of age.

The unity of these two programs is also valuable in mitigating some of the popular (or unpopular) perspectives on how the scientists or researchers are viewed through the lens of the popular media (Szu, Osborne et al., 2017). Furthermore, when 'real' researchers (undergraduate/graduate and faculty) present relevant research, there is a greater propensity for the youth to discuss the topic within their family or a group of friends. This is evidenced by a statement from the youth coordinator in one of our partner organizations:

The MCYU Events were an amazing opportunity for my group of students. They were so eager to attend each month and would discuss the lectures and activities for days afterwards.

2018 Aneesa

Strategies to Reduce Barriers to Attend Programming

One of the areas where the MCYU has been relatively successful in breaking down perceived barriers to exploring post-secondary education is the issue of transportation. The McMaster University is situated between 10 to 15 km away from many of the communities characterized as under-resourced in socioeconomic terms. Based on the study carried out and published (April 10, 2010) by the 'Hamilton Spectator', a local newspaper, these communities are referred to as Priority neighborhoods. In many cases, families in these Priority neighborhoods do not have the means to travel to the University campus, either for financial reasons or lack of time. Therefore, the MCYU has supported the attendance of the youth from many of Priority neighborhoods by providing free busing. However, this would not be possible without the commitment and collaboration of a number of community service organizations, such as the Boys and Girls Clubs of Hamilton or the North Hamilton Community Health Centre. Over the years, we have had increasing numbers of the youth from many of our partner organizations attending these lectures. This is evidence that our strategy of reaching into the Priority neighborhoods with our student facilitator-mediated workshops and encouraging the youth and their families to explore the campus has raised awareness, increased engagement and resulted in increased attendance from these groups. Importantly, these are opportunities for families who may not have had the opportunity to experience the University campus, or to explore the post-secondary environment.

Incentives have also helped to provide long-term engagement for our program. Like many other Children's Universities around the world, the MCYU offers a 'Learning Passport'. This is a colorful card provided with a colorful lanyard that may be validated at each of

the MCYU on-campus lectures. If the youth attend six out of our eight annual lectures, they are eligible for our 'Certificate of Knowledge', a diploma-style document with the MCYU's seal. If they attend six out of eight lectures for four years, they receive a 'Bachelors of Knowledge' diploma, and if they continue this attendance rate for six years, they receive a 'Masters of Knowledge' diploma. To date, several young people have received the Masters of Knowledge. On average, we have approximately 80–90 young people who receive a 'Certificate of Knowledge' annually. In the 2016/2017 academic year, we had 23 young people from Hamilton's under-resourced communities, who obtained a 'Certificate of Knowledge', which was one of our proudest moments. This was due to the advocacy of our partner organizations and because we were able to provide free busing for the first time. Overall, our annual diplomas remain one of the major incentives for the youth and families to attend our events.

The Rationale for a Family-based Education

The MCYU is a program that is passionate about open access to knowledge creation and providing the community access to the benefits of scholarly research and creative activities. However, these perspectives offered to the whole family allow for all those connected to the child's education to appreciate the resources that are available to the community. It also introduces families to the types of on-going research, teaching, and activities occurring on the campus. This opportunity to explore the University community ultimately allows families to understand the value of having a large post-secondary institution located within their community and contextualize the activities happening on the campus in terms of their own personal beliefs and values. Furthermore, the recognition of being a 'good neighbor' also has a significant value to research institutions like McMaster University. Key to this relationship is the concept of learning reciprocity. In fact, programs like the MCYU have been encouraged by McMaster University through the vision of the President and a policy referred to as the 'Forward with Integrity' Document. This vision has increased the University's interest in carrying out meaningful community engagement.

The Canadian Federal Research funding system has also been driving the interest of Universities to engage more deeply with the public. These agencies require that individual researchers carry out knowledge translation programs associated with their specific research areas. For many researchers this may be a daunting effort and they simply do not have the infrastructure to carry out knowledge translation beyond the publication of research articles and conference presentations. The MCYU is now working to establish itself as a platform that may be utilized by a variety of researchers to reach out to communities and encourage them to explore their areas of interest by connecting with

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the youth and their families. The MCYU on-campus lectures allow for a public forum in which researchers can engage families who may not have been able to learn about their individual research programs. In fact, as a program, the MCYU has created several new connections between researchers and members of the community. Once again, this has served to deepen the relationship between the University and its neighbors. In the long run, we are hopeful that this may help to serve as a form of advocacy for the on-going research happening at the University, and garner public support for funding for the University projects by influencing local politicians.

Other advantages of family lectures include the opportunity for families to spend time together and foster discussion about the experience, whether it is a workshop or a lecture. The exploration of alternate career paths and knowledge about the Canadian educational system is not always evident to new immigrants and families who do not have a history of post-secondary education. The MCYU on-campus lectures have provided an opportunity for these families to explore the alternate possibilities. This view is echoed by one of the community workers that bring the youth from Hamilton's Priority neighborhoods to campus.

Many of their parents are new to Canada and do not have a lot of knowledge about post-secondary education. The events allowed them to be exposed to some of the possibilities out there. Simply getting to sit in a lecture hall was so exciting for the students! Since these events, the students have been asking more about post-secondary education. Thank you so much for creating this opportunity for young minds.

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The Role of Partnerships in the MCYU

Over the last seven years, the MCYU has focused on developing partnerships with parents, community organizations and other programs within the McMaster University in supporting the learning environment for the youth in the community. These partnerships are also important for the sustainability and growth of the MCYU program by providing a forum to promote the program and to recruit volunteers. Since its inception, the MCYU has formed partnerships with 18 different organizations/groups in order to deliver its programming. These collaborations may be subdivided into four broad categories: partnerships with community organizations, University programs, parents, and the youth.

Partnerships with Community Organizations

One of the primary reasons for partnering with community organizations is to utilize their wealth of expertise on how to effectively engage with members

of their local communities. Some examples of community organizations that participate in our program include the Hamilton Boys and Girls Club, the Hamilton YMCA, the North Hamilton Community Health Centre, and the Hamilton Pathways to Education. These groups primarily serve the youth in Hamilton's Priority neighborhoods and have collaborated with the MCYU in a number of ways: encouraging and supporting the youth attendance at our programs; providing feedback on how to attract parents; and advising on how to best shape the delivery of the MCYU workshops by serving as focus groups, and by providing letters of support and encouragement as the MCYU struggles to maintain its funding. The MCYU invested heavily at the start of its programming to meet those organizations and listen to their advice and form meaningful relationships, and ensure that their feedback was thoughtfully considered when the MCYU shaped the delivery of our programming. One of their primary requests was that the MCYU works with the students to help them visualize a place for themselves in the post-secondary environment.

Our single largest community partner is the HWDSB. The school board works with the MCYU to identify schools and principals having the resources to accommodate the MCYU workshops. In this forum, the teachers and principals have become significant advocates for the program and they often provide feedback to improve the workshops. Furthermore, many of the teachers have also participated in priming their classes in preparation for the MCYU programming by posing questions and establishing the inquiry-based learning environment. The collaborations with the schools have provided significant improvements with our workshop program, both in the delivery and the content.

Public libraries are the places where the MCYU may jointly engage parents and the youth. These collaborations help to attract the youth spanning a very broad range and families spanning a very broad socioeconomic spectrum. The MCYU programs help the libraries to foster curiosity in order to encourage family-based learning; objectives overlapping with those of the MCYU. Furthermore, when the parents are present at those workshops, they often ask the MCYU facilitators questions about the University programs that they see their children attending; this interaction also helps to reduce the perceived barriers to attending post-secondary educational institutions.

Partnerships with the University Organizations

Partnerships with the university organizations are central to sustain the MCYU as a university-based program. Therefore, the MCYU works to highlight the research efforts of the various faculties across the campus and has formed alliances with the other McMaster University programs in order to recruit volunteers, student facilitators, and the MCYU staff. For example, the MCYU workshop-based manager's salary program is supported by the MacPherson Institute for Leadership, Innovation & Excellence in Teaching, and our program administrator's workspace is provided by

the Department of Pediatrics. A number of faculties provide their time, on a volunteer basis, to grow the program and ensure its quality. The University, recognizing the value of the program to the surrounding community as well as the students and staff, has kindly provided significant funding to help with the program implementation and growth. In addition, partnerships with individual researchers are also valuable to the MCYU in establishing an expertise base. When facilitators choose to develop outreach workshops on certain subjects, access to the faculty who are willing to guide and evaluate the accuracy of the workshop content is important in growing the credibility of the MCYU within the community. Due to the broad spectrum of the content covered by the MCYU it is not possible to manage the content accuracy with only one or two faculty supervisors. These alliances with students and the faculty also help to mobilize research/knowledge concepts relevant to the individual faculty members, and the student facilitators help to shape that content in a way the public, especially the youth, can better appreciate. This symbiotic relationship is essential to attracting increasing numbers of the faculty members to participate in the MCYU program.

One of the most valuable alliances is between the MCYU and the undergraduate and graduate students who become the MCYU facilitators. The MCYU provides mentorship and training to help students leverage their academic background into developing practical strategies to address challenges faced in the communities of Hamilton. However, such challenges may be translated to many communities around the world. For example, how to address the need for better hand washing in an effort to improve the youth hygiene was developed as a workshop entitled 'Beat the Bug.' The need to understand biodiversity in our natural environment and to encourage conservation efforts was developed as a workshop called 'Backyard Biodiversity.' The development of these workshops aids in the building of practical skills in critical thinking and communication: vital skill sets in the current employment landscape.

Partnerships with Parents

Perhaps one of the most valuable partnerships we strive for is the partnership with parents. Despite the challenges that may exist in engaging parents, there is evidence to support that adolescents feel more engaged and comfortable when their parents are involved in their education (Xu, 2002). For the parents, such opportunities generally take the form of parent-teacher meetings, and involvement in school fundraising activities or committees. Rarely are there co-learning opportunities. In fact, Eccles and Harold suggested that teachers would like the parents to be more involved in the education process and parents also wished to be more active in their child's education (Eccles and Harold, 1993). This is the primary rationale for the family-based approach taken by the MCYU. The co-learning opportunities that are offered by the MCYU workshops provide parents and the youth with

the opportunity to work and ask questions together. These situations allow the parents to invest in their children's education while spending time together and are predicted to result in improved academic standing in the case of very young children (Schlee, Mullis et al., 2009). However, the MCYU has not carried out such an evaluation and the efficacy of the MCYU's program on academic upskilling remains to be determined. One primary barrier faced by many of the parents in the families targeted by the MCYU in Hamilton's priority neighborhoods is simply availability of time for co-learning or participation in their children's education. The demands on the low income or single income families in these neighborhoods make parental engagement difficult. However, the MCYU continues to engage with groups such as the Boys and Girls Clubs of Hamilton and the North Hamilton Community Health Centre to explore innovative strategies in developing these opportunities.

Currently, the MCYU strives to offer parents and children a voice in directing the growth of the program by conducting post-event surveys that allow participants to make suggestions for logistical improvements and the selection of topics that they would like to see covered in future sessions.

Partnership with the Youth

The goal of the MCYU is to provide agency to the youth. Our stated vision is 'We aim to work with the youth to help them become more engaged citizens.' While our lectures allow the youth to directly question the work of research and thought leaders from the McMaster University and our workshops allow them to work with the MCYU facilitators to co-create solutions to real world problems, one of the most participatory opportunities sought after by the families is the Youth Advisory Board. Every year the MCYU selects between 10–12 young people (along with their parents) to participate in the meeting during which their opinions about the program and suggestions for improvements are recorded. Traditionally the MCYU interacts with two broad age groups: 6–9 and 10–14 years old. The parents are interviewed separately as a group while the youth participate in games and activities that are designed to understand their likes and dislikes about the program. Through such activities, the MCYU has recently made major modifications to their website. The contributions of the youth are central to the mission of the MCYU and represent our primary partnership.

The partnership with the youth has also driven the engagement of graduate and undergraduate student volunteers. The youth are quite interested in querying the experience of the MCYU facilitators in order to learn about their academic experience and career aspirations. This line of questioning usually surprises facilitators as there is quite often the perception that the youth in the middle school are not at all focused on post-secondary experience and career development. In fact, the MCYU has found that the opportunities for these discussions are highly valued by the com-

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munity and especially the youth. It is the enthusiasm of the youth and their parents that has allowed the program to maintain a growth rate ranging from 20 to 25 percent during the last five years. This growth has contributed to increased funding and stimulated the delivery of an increased number of engagement opportunities.

Acknowledgements

Special thanks to Ms Sheila Richardson for help with editing the manuscript. The MCYU would also like to thank the Hamilton Community Foundation (The ABACUS program; and the Edith Turner Foundation) for providing funding for this program. Additional funding was also provided by the McMaster University, the Office of the Provost and the Natural Sciences and Engineering Research Council (The PromoScience program). The MCYU also thanks the McPherson Institute and the Department of Pediatrics for the in-kind contributions. More information about our programming can be obtained from www.mcyu.ca.

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Abstract

The McMaster Children and Youth University (MCYU) was founded with a vision to develop family-based educational engagement through community partnerships. The cornerstone of the program is the MCYU's credo, Question Discover Create. Question your environment, Discover your potential and Create a brighter future. The MCYU has developed partnerships with community organizations, University organizations, parents and the youth to facilitate its two primary outreach efforts. The first arm of the program, the on-campus lecture series, has reached more than 6000 young people and their family members over the last 7 years. This component of the program allows attendees to engage with the University faculty through family friendly lectures and provides an opportunity to pose Questions. The MCYU also provides inquiry-based workshops in public schools, libraries and community centers which are facilitated by multidisciplinary teams of undergraduate and graduate students from the McMaster University. These workshops allow the youth to experience the feeling of Discovering new knowledge and Creating solutions. In the 2017–2018 academic year the MCYU workshops connected with 964 unique individuals through 101 workshops. Many of those young people attended several workshops demonstrating the MCYU's success at sustainable educational engagement. Taken together, the MCYU's mission is to foster more engaged citizenship in our youth.

Key words: co-creation; family-based education; educational partnerships; youth-citizenship

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Why should children's universities strive to strengthen the children's self-efficacy?

Magdalena Maleczek*

The article aims to familiarize the reader with activities of the Children's University Foundation undertaken while participating in the international STEAM4U project. The project aimed at strengthening the children's self-efficacy, and thus promoting equity and diversity in science. Based on the source materials, the author also wants to draw attention to the problem of insufficient equity and diversity in the world of science and to describe the knowledge gained as part of the project. The study presents selected data derived from investigating self-efficacy in children, carried out within the scope of the project.

Introduction

The Children's University Foundation has been organizing workshops and lectures for children conducted by scientists and other professionals since 2007. It is a non-governmental organization acting in the field of non-formal education, which provides classes for children aged from 6 to 16. Development of the creative and intellectual potential of children, so that they can understand the world around them and are able to act using the richness of their talents, knowledge, and abilities constantly remains the mission of the Foundation. The participation in the STEAM4U project enabled the Foundation to take on new challenges posed by international cooperation and sensitize to a specific problem. The primary goal of the project was to strengthen the self-efficacy of children aged 10–14 in the area of STEAM (Science, Technology, Engineering, Arts, Mathematics). It is worth to emphasize the universality of this concept in the field of education. The project partners intended to develop those aspects of their everyday activity which could contribute to enhancing the children's self-efficacy. Participation in the international project revealed that there is a strong need to develop confidence in the youngest in the STEAM area, and thus, the necessity to promote equity in science, does not refer only to Poland.

What is self-efficacy?

The concept of self-efficacy, as explained by Augustyn Bańka quoting Albert Bandura means *a specific assessment of one's own competences, the possibility to perform various tasks in a given field, so it is an individual judgment of one's ability to cope with specific tasks* (Bańka, 2016, p. 9). It can therefore be said that this is a subjective belief, which amounts to saying, 'I know that I can do it,' 'I know I can cope with it.' Self-efficacy refers to the possessed skills and some kind of certainty that one can face a given task. This concept is especially important when we look at it in the context of education. By strengthening the children's self-efficacy, one can shape their belief that they can cope with learning, that is, they can manage to do tasks that previously seemed impossible for them to undertake (regardless of social stereotypes or the social capital that a child has). It is worth noting that the self-efficacy is closely related to the aspirations of individuals and the goals they set for themselves. As Bańka emphasizes, people with a higher self-efficacy are less afraid of new challenges and are more willing to undertake them (Ibidem, p. 10). This is especially important when we take into account the school period, i.e., the time when we are just discovering what we like, what we can be good at, the period which indirectly influences the subsequent choices and, in the longer term, the choice of professional path. It is worth, therefore, while acting in the area of education to use from the very beginning such strategies that will enhance in children the conviction that they are good in some area, that they possess proper skills to face, for example, a mathematical or technical task.

In the Polish teaching context, that issue seems to be particularly important. As the report from research on the school textbooks shows, many pieces of content included in them strengthen gender stereotypes concerning, among others, social roles or professions

* Children's University Foundation

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(ICBPKiT, 2015, p. 7). According to the authors of the report (...) *in the case of the analyzed textbooks, one can notice a significantly more frequent representation of men in the professional roles at the top of the hierarchy – senior management, non-technical intelligence, freelance professions. Women are in turn significantly overrepresented in professions related to office work, to trade and services. More often than men, they are presented as people outside the working world – unemployed or studying* (Ibidem, p. 20). In this context, the appropriate attitude of teachers and other people conducting classes with children can complement the necessary message about the gender equity issue. It may help to educate children about the fact that both boys and girls can meet in the future their objectives in exact sciences and also act professionally in the field of science and consequently choose the same career path.

Striving for equity in education

The indicated problem can be tackled from the perspective of unequal representation of women and men as well as people of various social backgrounds in the world of science, which in principle should be available to all researchers, regardless of their origin or gender. The STEAM4U project drew attention to the need of addressing the problem of inequity in science and underlined the importance of enhancing children's self-efficacy as the activity that would reduce these disproportions in the future. Strengthening in children the belief that scientific activity is for them, making them aware of their skills, may in the future pay off with the fact that they will boldly aspire to professions and fields of science that stereotypically seem to be reserved only for people of specific sex, origin or social status.

The aforementioned problem of insufficient equity in the world of science can be confirmed by data from the Central Statistical Office, which indicate a significantly lower involvement of women in the world of science in Poland. As these data show, in 2005 the academic titles of Professor granted to women constituted 27% of the total titles awarded in this category (CSO, 2007, p. 120). On the other hand, doctoral and postdoctoral degrees awarded to women constituted 49.5% and 36% of all titles successively (Ibidem, p. 119). More than a decade later, GUS data from 2016 show a similar percentage distribution of women's participation in the world of science. The doctoral and postdoctoral degrees granted to women constitute respectively 53% and 43% of all titles (CSO, 2017, p. 160), whereas the title of professor 33% of all titles awarded in this category (Ibidem, p. 161). The indicated problem seems to arise, at least partially, from prejudices deeply rooted in university structures. It can be exemplified by the experiment, referred to in the article written by Anna Tylikowska for 'Polityka' (Tylikowska, 2017, pp. 88–91). The experiment involved 100 science employees and was conducted by the team of a psychologist, Corinne Moss-Racusin, from New York's Skidmore College. The researchers

created a fictitious CV of a person applying for the position of a research laboratory manager. The CV had two versions, differing only in the candidate's gender. The researchers proved that the professional biography of a man was more often assessed positively by the scientists. Thus, it turned out that the identical achievements presented in the CV were additionally assessed, perhaps unknowingly, through the gender perspective of the candidate.

There is still a need to promote equity in the world of science and increase the participation of women in the STEAM area. This problem can also be extended to other categories different than gender – such as origin or ethnicity. Well-designed programs and activities that will facilitate women's scientific work can constitute an answer to this challenge. At the same time, it is also worth focusing on the earlier stage of children's education and starting at the level of primary school to strengthen their belief in the value of their skills, to know that they can aspire high.

So what kind of action should be undertaken in education to strengthen the children's self-efficacy? Is there any place for that in the activity of children's universities? The participation in the STEAM4U project caused the need to reflect on how the activities of organizations or institutions related to education can affect the increase of children's self-efficacy.

Experience from the STEAM4U project

Observing the activities of the Children's University Foundation, one may spot that it is the meetings of children with scientists and specialists that make students of the Children's University feel more confident in STEAM area. The first task in the project was to analyze the activities of each of the partners. It was to indicate the essential aspects of this activity in terms of affecting the children's self-efficacy. The areas worth strengthening in the Foundation's actions proved to be, on the one hand, the student-teacher relationship, and on the other hand, shaping a positive learning environment/atmosphere affecting the participants. That indicates essential features that distinguish children's universities, which are meetings with scientists on a university campus, the use of laboratory equipment or exploiting methods of work other than those used during the lessons. All these elements can affect the participants of the course and translate into a different perception of their skills and abilities.

What is more, a meeting with representatives of the world of science can demystify that world sometimes perceived by children as the world reserved for a stereotypical scientist 'in a white apron.' Getting to know real scientists, their passion or attitude, experiencing them the way they are and how they work can encourage participants to acquire scientific knowledge. The young students can, therefore, create their own picture of scientists and the world of science based on their personal experience gained during the classes. Thanks to this, they can more easily attempt to identify themselves as future scientists.

The aim of the Foundation in the STEAM4U project was, first of all, to focus on those aspects of its activities that might help children appreciate their skills. Another important goal was to create a learner-friendly environment and to prepare the lecturers to work with children. The latter aspect, namely building a friendly scientist-child relationship, was treated as a priority. The role of the course instructors was to teach children that mistakes accompanying scientific research are nothing unusual neither wrong and they do not indicate someone's inability to cope with the task. Just the opposite – the errors and one's attempts to correct them can be a valuable lesson in solving problems. The scientist thus becomes a guide in the world of science. Also, an appropriate interpretation of errors and mistakes allows children to learn how to deal with failures. Another strategy of action that can be included in the teaching process is the right way to motivate children and comment on their work. Encouragement through praise, emphasizing commitment and work or providing proper feedback is highly advisable when working with children.

As part of the project, the Children's University Foundation prepared materials for the teachers conducting classes with children. They contain additional knowledge on how to strengthen the self-efficacy in young learners. Graphical elements support the presentation of the selected pieces of information on how to motivate and comment on children's work. Additionally, two video materials dedicated to the lecturers were developed. In the first recording, the lecturers at the Children's University describe their impressions after lectures and share some tips on how to talk to children. The second video directly concerns the concept of self-efficacy and justifies why it is essential to strengthen it in children. Another material developed as part of the project is a film dedicated to children. Its role is to show children what the day of a scientist looks like and what features are important in his/her work. Thanks to this recording children can learn, among other things, that in the world of science, everyone speaks a language specific for that world, regardless of their gender or origin. Therefore, it may be concluded that the world of science should not depend on such divisions. All materials are available in English, which increases the reach of recipients and facilitates the dissemination of knowledge on the discussed topic.

The materials developed within the project can be used both in formal and non-formal education (i.e., the children's universities). It is worth to be mentioned that each partner of the project worked on the materials aimed at different groups of the recipients (e.g., parents or volunteers). Such an approach extended the variety of strategies that can be used to enhance the children's self-efficacy.

Evaluation of activities

The Foundation's task within the framework of the project was to check which elements of the activities are most meaningful to children in terms of the enhancement of their self-efficacy. At the same time, from the Foundation's point of view, it was interesting to learn whether the classes at the Children's University contributed to increasing the sense of the effectiveness of their participants. The study was carried out among the students of the 'Master and Apprentice' program (12–13 years) of the Children's University. The program for this age group covers five cyclical meetings in one semester with a scientist of a selected specialization. Children also participate in various additional lectures. The survey consisted of three parts – a pre-test questionnaire (before the start of the first classes), a mid-test after three consecutive meetings, and a post-test questionnaire (at the end of classes closing the selected specialization).

The pre-test yielded answers from 192 students ($N_{\text{girls}} = 73$, $N_{\text{boys}} = 119$), 155 students participated in the post-test ($N_{\text{girls}} = 60$, $N_{\text{boys}} = 95$). The data were collected in the first semester of the 2017/2018 academic year on the selected specialties, including seminars on genetics, microbiology, and electronics.

The first group of questions referred to the general reception of classes by children (whether the classes were interesting to them or not) whereas the second part aimed to clarify which topics or aspects of the activities the children liked most. Additionally, the questionnaire included questions related directly to the level of self-efficacy associated with the tasks such as: conducting experiments, searching for solutions to the given problem, collaborating with others or presenting results and conclusions. For the Foundation, the children's answers constitute a source of knowledge about the areas in which the strengthening of the participants' self-confidence can actually be seen. It may also be assumed that at least some participants of the course while answering the questions in the surveys asked themselves whether they felt that after completing the course they knew more – which may be considered a kind of 'monitoring' the competences.

By juxtaposing data from the pre-test and post-test, a declaration of an increase in self-confidence in some categories can be noticed (to varying degrees among boys and girls). The data also allow for checking if the participants feel that their sense of agency in particular aspects has increased. Additionally, the data enhance the identification of those elements of classes at the Children's University, which are the most significant for the participants in terms of influencing their self-confidence.

The collected data have been analyzed and the results described in the case study created as part of the project¹. The data presented in Figures 1. and 2. come

¹ More information about the project could be found at: <https://steam4u.eu/homepage/steam4u-on-line-guide/>

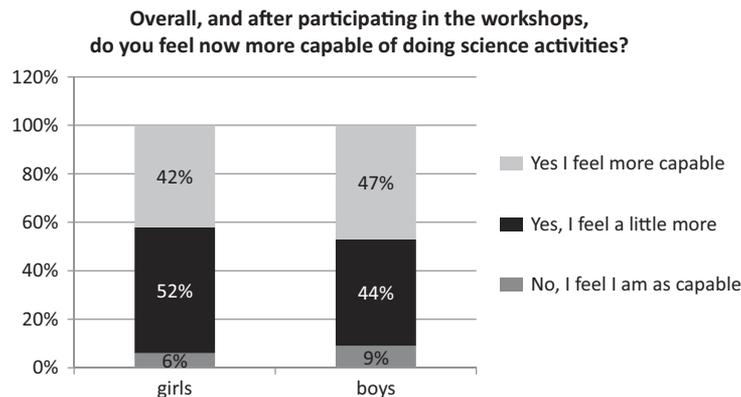
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from the analysis of the answers to two questions from the post-test questionnaire. The first question directly concerned the student's assessment of self-confidence (the question: 'Overall, and after participating in the workshops, do you feel now more capable of doing science activities?'). The second question aimed to indicate which aspects of the classes could influence the assessment of self-confidence by students (the question: 'Which of the following characteristics of the workshop have made you feel more capable of doing science activities?'). Figure 1. illustrates the study in terms of self-efficacy in children, providing an answer to the question whether it increased after the entire cycle of classes. The presented answers show that both girls and boys declare that their self-confidence increased. However, the differences between them are visible at the level of selected categories of answers. The option 'Yes, I feel a bit more capable'

was indicated by 52% of girls and 44% of boys. The responses show a difference of 8 percentage points between the indications of boys and girls. However, the category 'Yes, I feel more capable' was chosen by 47% of boys and 42% of girls, which gives 5 percentage points difference.

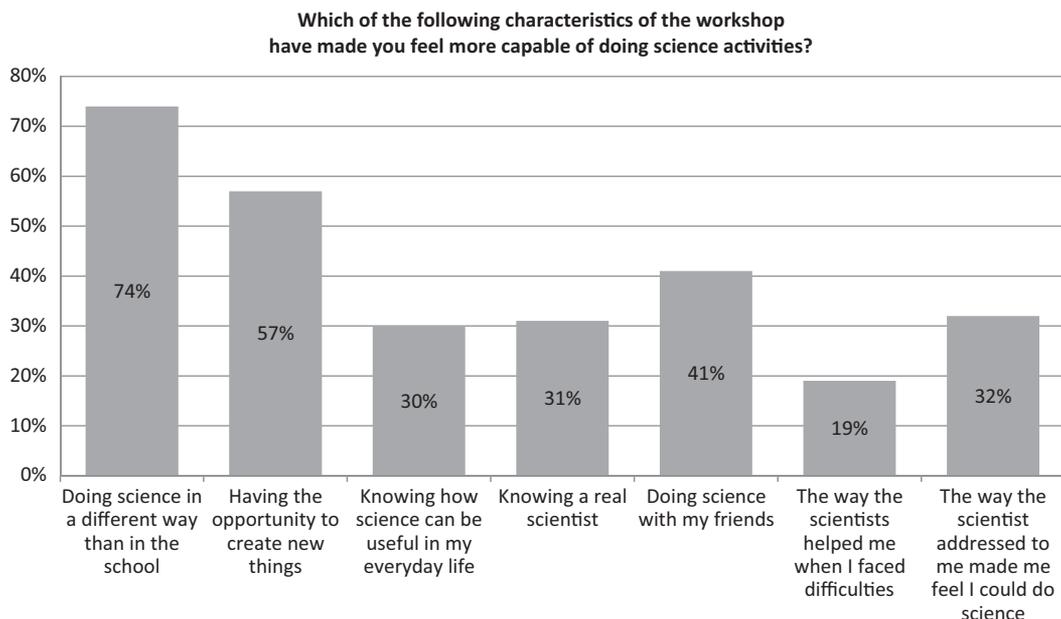
The factors that can affect the children's confidence constitute another aspect of analysis. Figure 2. presents the distribution of children's answers to this question. The data show that for children the opportunity to use during the classwork methods other than at school and the possibility to create new things were the most significant. It is these elements of classes that appear in the participants' declarations most often. Other aspects, such as getting to know the scientists or the way in which the lecturer encouraged for work continuation were less significant and less frequently chosen as answers.

Figure 1. Children's assessment of self-efficacy



Source: Author's own study.

Figure 2. The analysis of factors influencing children's assessment of their own skills



Source: Author's own study.

Thus, the main factors influencing the enhancement of self-confidence in children are active classwork and the feeling that they create something new. Independent work and problem solving allow participants to see the immediate effect of their actions and tangibly feel that they can do something or create something new. Thanks to this, they feel that they have coped with the task, which strengthens confidence about their own skills. Although the impact of scientists on the sense of effectiveness in children has not been clearly justified during the study, it seems that the person who leads the course may significantly affect the way in which the participants interpret their own actions and mistakes. The influence of the lecturer themselves seems to be a long-term process, which may affect the way in which participants will assess themselves (however no direct relation was found). Therefore, scientists should be supported in the preparation process for conducting classes with children, to make them sensitive to the concept of children's self-efficacy so that they could express the proper attitude or feedback to strengthen the 'I know I can' belief in the youngest. The method used by the teacher (in the case of children's universities, a scientist conducting classes for children) to affect his students is described by Czesław Kupisiewicz. *Students fascinated by the personality of a good teacher see in him/her a model worth following (...). And vice versa, a less ambitious teacher (...) will not encourage people to 'go beyond mediocrity,' will not set targets for them that are worth pursuing and should be pursued* (Kupisiewicz, 2012, p. 224). It illustrates the teacher-student relationship in which the teacher can be a catalyst that encourages students to learn and take on challenges.

Conclusions

The STEAM4U project drew the Foundation's attention to the necessity of including the concept

of children's self-efficacy as part of educational activities. The examples in the first part of the article illustrating an inadequate representation of man and women in the world of science prove that the issue of gender equity in that world should be promoted from the early level of school education. Such activities could help students to appreciate the value of the skills and competences they possess so that they can choose their future career path based on the unbiased evaluation. The experience gained through the participation in the project allowed the Foundation to learn in what a manner its activities can strengthen the child's self-efficacy. It was also an opportunity to exchange experiences, knowledge and good practices with other partners. The analysis presented in the article only highlights the problem and may constitute an invitation to other educational organizations and institutions to enhance their activities with methods that strengthen the children's self-efficacy.

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Abstract

The article originates in the experience of the Children's University Foundation gained during the participation in the international project STEAM4U, implemented as part of the Erasmus+ program. The aim of the study is, on the one hand, to explain the concept of self-efficacy in the field of education. On the other hand, it outlines the problems of gender and origin inequity in the world of science. The author of the article describes the project initiatives undertaken by the Foundation that enhance children's self-efficacy and presents selected teaching strategies that can be applied to the activities of children's universities or other educational institutions. The study presents selected data derived from the research on the children's self-efficacy, carried out as part of the project activities. The data allow for answering the question of whether the classes at the Children's University strengthen the children's self-efficacy and for indicating what types of activities are greatly appreciated by children. The participants' answers reveal that the most significant factors influencing the enhancement of self-confidence in the area of STEAM are active involvement and the use of learning methods other than those exploited at school. The experience described in the text may be an inspiration for other educational initiatives, encouraging them to enrich the teaching process with strategies oriented on developing the children's self-efficacy.

Key words: self-efficacy; non-formal education; children's universities; equity in science; STEAM

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Challenges for socialization in contemporary Poland. The role of children's universities¹



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For recent 30 years, all institutions in Poland, as well as the Polish society, have to deal with the changes in almost every area of life – from the economy, political system, legal solutions, social life organization, to the culture. Challenges such as the market economy, increasing consumers' expectations and needs, expanding areas of inequity, a spread of the democratic procedures and growing multiculturalism require looking for new solutions, as well as new ways to introduce them. Therefore, it becomes crucial to adjust the processes of upbringing and education in such a way that they respond to the needs generated by the changes in all areas mentioned above. Establishing and supporting an educational initiative could be part of those processes.

Education and upbringing of young children are issues of particular importance with regard to the success of modernization processes. In many countries besides the formal education system, various types of non-formal education aimed at applying the most effective ways of transferring knowledge and skills as well as shaping key competences exist. The children's universities are an example of such institutions. Although, it is only a decade when the first children university appeared, they play a very important educational and social role. A year 2007 is the beginning of children's universities presence in Poland (this is the date of establishing the Children's University Foundation², which was the first institution of that type in Poland). Most often, they are created at and by the universities. In this paper we will try to answer the following questions: Could they play an important role responding to the challenges of modern socialization in Poland? What are their advantages?

Introduction

From the sociological perspective, the observation of changes taking place in the modern world allows noticing the increasing complexity of social life processes and consequently, the new challenges the individuals, as well as the whole social groups, must face. Successive generations participating actively in

various areas of life must also be increasingly active on a global scale. However, keeping to the primary goal of this article the author will concentrate on the issues of preparing young generations to function successfully in the ever-changing world around them.

First of all, the socialization process must correspond to the expectations of individuals. It should allow them to acquire skills, knowledge, and competences indispensable for dealing effectively with all the tasks generated by their participation in various areas of social, economic or political life. On the other hand, the course and effects of the socialization process should also respond to the expectations and needs of the society and the state. It is particularly important when it comes to the maintenance of continuity and social stability as well as the possibility of pursuing a specific policy.

Among the most important tasks for Polish society in the coming years is the development of competences allowing its citizens to deal effectively with different circumstances such as market reality, fierce competition, multicultural communities, and democratic society. It does not simply concern acquisition and updating of knowledge, but first and foremost, development of creativity, gaining various competences and skills, lifelong learning, and building social capital.

The level of knowledge and economic competences of the Polish society

While assessing one's readiness to deal with the challenges, we should first emphasize the importance of an economic dimension of people's existence and activity understood as their participation in the production, acquisition, possession, and consumption. Nowadays, the participation in economic processes is redefined both considering the new (modified) needs and aspirations of individuals along with

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¹ The article was created as a part of the statutory research of the Department of Sociology financed from its own resources by the Cracow University of Economics.

² <https://fundacja.uniwersytetdzieci.pl/en/>

the new community goals and also the changes of systems and hierarchies of the values. That is both about knowledge and understanding that support orientation in the transformations of the economy (perceiving threats, identifying opportunities) as well as about the practical knowledge giving a sense of security in making everyday decisions. That concerns, for instance, expenditure planning, accumulation of savings, management of resources, choosing the proposed benefits or the workplace, and active participation in the market processes. However, as the research results – also those included in this article – indicate a significant part of the Polish society does not have basic knowledge about the economy. People do not understand its mechanisms, cannot observe the processes and how they influence their individual decisions. Economic knowledge mainly comes from popular media. At the same time, over 70% of middle-school and high-school students think that such knowledge is necessary. They would prefer to learn it from teachers and not from parents or media messages (Młodzi Polacy nie mają podstawowej wiedzy z ekonomii, 2012). The results of diagnostic tests carried out in 2014 about knowledge and economic awareness of children and youth in Poland are not very optimistic (Diagnoza wiedzy i świadomości ekonomicznej dzieci i młodzieży w Polsce, 2014, p. 5). As the authors of the study point out, *by translating the Index of Economic Competences (developed as part of research) to the school scale, insufficient level of knowledge (less than half of the points) is presented by as many as 44% of the 6th grade primary school students, 41% of the third-grade middle-school students and 28% of the last but one class of upper-secondary school students. About one-third of the tested students receives a mark C ('satisfactory'), while mark B ('good') is achieved by about a quarter of primary school students, 21% of middle-school students and every third secondary school student. Only a few can manage to achieve an A mark ('perfect' for which 90% of correct answers are necessary) – that concerned only 0.5% of primary school students, 2% of middle-school students and 4% of secondary-school students.* It is worth to mention as well, that tests of the economic knowledge, concerning adults actively participating in social and economic life also indicate the low level of their familiarity with the economic realities. Only 38% of them achieved 'high' scores in the economic test, 44% an 'average' and 18% – 'low' (Stan wiedzy i świadomości ekonomicznej Polaków, 2015, pp. 19 and 40). Sabina Kołodziej, considering the need for economic education of children and youth, recalls the results of research which show that a significant part of the researched group has the stake in the economy – by spending money that they have at their disposal (90% of the respondents aged of 11–18). It does not mean, however, that the youngest participate in economic activities as conscious entities. They do not know much, especially about macroeconomic issues. They use common simplifications and stereotypes rather than well-defined concepts. Also, children and youth do not see the links between different economic

phenomena. Their knowledge of the terms which refer to the economy and are used in everyday practice, for example in a household, is slightly better. However, even the familiarity with these concepts does not necessarily go hand in hand with the ability to apply them (Kołodziej, 2014, pp. 99–100). Moreover, while participating in management processes, people need to adapt to the new economic realities influenced by new technologies, new rules of the organization, as well as the altering values and beliefs. Therefore, the changes in attitudes, behaviors, and aspirations are necessary. They involve, for example, attitudes and features such as entrepreneurship, independence, creativity, innovation or other elements influencing pro-development orientation. Another vital component of this process is the adaptation to taking the risk. That is an integral part of the market economy – the ability that allows surviving against fierce competition, adjusting to various forms of ownership what results also in changing the range of rights and obligations.

On the other hand, the majority (67%) of respondents to the survey mentioned above declare that knowledge of economics, finance, and economy is necessary, while only 29% claim that it is unnecessary. The answers depend on several factors. Some of them are the level of education and the economic knowledge the respondent already had, how it was obtained – through formal or non-formal education, experience in using financial services etc. Information about the pension (34%) and insurance (44%) systems have attracted particular interest among the participants of the diagnosis (Stan wiedzy i świadomości ekonomicznej Polaków, 2015, pp. 39–43).

Behaviors in the field of the economy cannot change rapidly. The results of various reports on opinions, attitudes, aspirations, and actions undertaken by Poles show that those characteristics are relatively constant (Postawy Polaków wobec finansów, 2017; Portret finansowy Polaka, 2016). Therefore, shaping the desired (rational) attitudes and behaviors should start as early as possible. The lack of economic knowledge and competence may result in making wrong financial decisions and decreasing the chances of building a proper basis for family economics and its secure future. Moreover, it weakens the ability to achieve a successful position in the labor market, perceive benefits and avoid losses.

Civic competences and knowledge about socio-political processes among the Polish citizens

The second area of challenges that processes of socialization have to face is the participation of individuals and social groups in a well-functioning community. It is about acquiring appropriate predispositions such as knowledge and skills enabling the individual to undertake social roles, especially the role of a citizen, a member of the community,

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a participant of the important processes and tasks, and a negotiator. The new reality – social, cultural, economic and political – developing throughout the last three decades, makes it necessary for one to adapt, both in an individual and collective dimension, to various new conditions and expectations. Among them one can point to shaping new legal principles, expansion of democracy (including local democracy), creation and operation of many different NGOs, civic movements and other institutions of the so-called third sector, the multiplicity of political parties, openness to the world, extending scope of freedom, increasing respect for property rights. As a result of the changes of the society new challenges emerge. Modern society becomes increasingly polarized, the social distance is growing and also the social mobility increases. It is perceived by modern sociology more like the process of becoming not a stable duration. Simultaneously, this new type of community is included in wider European and world structures (which strengthens 'fluidity' of structures, values, and aspirations). It may also be more open to confronting with: different value systems, other ways of understanding freedom and obligations of members of the society, various ways of organizing and defining responsibility and participation. On the other hand, it should be emphasized that the young generation of Poles, for years, has been more passive than active in social and political life; although, of course, there are some groups of young people involved in initiatives that are important to them. Similar tendencies also appear in Western countries. 'Absence in political life' is conditioned by many factors such as dissatisfaction with the political system, the way politicians act, and the belief that having any impact in political life is impossible. (Szafraniec, 2012, pp. 20–33). Such a situation is a significant challenge for socializing institutions because shaping readiness for active participation in social life seems to be one of the most critical processes of changes in the modern world.

Piotr Sztompka (Sztompka, 2017, pp. 16–18) stressed the importance of possibly universal assimilation at the level of internalization of the values that are crucial to harmonious functioning of social life and determine social integration. Those values are first of all trust, loyalty, reciprocity, solidarity, respect, and justice. They are values that conduce to establishing and maintaining the most important social interactions. Taking advantage of opportunities and utilizing different types of potentials – economic, social, political, and cultural – also depend on them. Shaping those values, promoting their acceptance, as well as introducing them into the system of education are elements that build a civil society. For years, the degree of Poles' readiness for actions aimed at the implementation of the task mentioned above and related to its mental orientations and attitudes

have been the subject of sociological analyses. The famous quotation coming from the letter of Cyprian Kamil Norwid to Michalina née Dziekońska Zalewska (14 November 1862): *We are not the society. We are a great national banner* (Markiewicz, Romanowski, 1990, p. 495) may be a good starting point for these considerations.

One of the most often quoted ideas, considering civil society, is the 'sociological vacuum' described by Stefan Nowak. This 'vacuum' may occur between 'the level of primary groups and the level of the national community' (Nowak, 1979, p. 160), and it could be described as the lack of connections and interactions that go beyond, the more or less, superficial contacts at the mezzo-structure level. For many years, this 'vacuum' has been and still is, both the area of interest of social life researchers and the subject of fears, especially for the third sector representatives, non-governmental organizations, as well as educators operating at various levels of formal and non-formal education.

The existence of a 'sociological vacuum' may create challenges for a well-functioning society. This well-functioning society could be described as a good social environment, in which every individual can satisfy, at an acceptable level, his/her basic and secondary needs, enter into desirable relationships with others, pursue selected lifestyles, participate in social life at the right level, achieve the goals which are important for him/her. It is also worth emphasizing that faced with the previously unknown scale of advanced processes of globalization and universalization, the sense of community is getting important again and people try to restore at least some of its elements. In the contemporary world, increasingly fluid and unstable, the significance of the idea 'we' based on local ties and territorial or religious foundations increases. Under these circumstances, the significance of communicating despite various social divisions grows and becomes a crucial element of establishing unions and reaching an agreement (instead of eliminating different voices) in a conflict situation (Krossa, 2009, p. 260). Increases also, at both a local and a global level of social integration, the ability to cooperate. According to Katarzyna Szara, this is one of the key development resources, the necessary supplementation and extension of the 'three Ts'³ indicated by Richard Florida (Szara, 2015, pp. 184–186).

Developing the values, attitudes and behaviors characteristic to the civil society is essential for proper functioning of the economy and social life processes. In civil society, there are more opportunities of identifying and resolving conflicts on various scales, both local and macro. Its development is also important for the development of culture and its dissemination. The idea of a civil society is present in all reflections regarding democracy and free market economy

³ 'Three Ts' in economy indicated by Richard Florida are: Technology, Talent and Tolerance. The term can have a slightly different meaning in other contexts. (Ed.)

(Korolczuk, 2007; Kapitał społeczny i zaufanie..., 2015; Sasinowski, 2012; Allan, Forrester, Patel, 2008). According to Charles Taylor, this sphere of social action is autonomous, it is based on the relationships between people, that are integrated around the most important values and matters for groups and communities that require a solution (Taylor, 1996, p. 47).

However, the creation and strengthening of the civil society require combination of many factors, among which education for 'being an active citizen' plays a special role. When assessing one's level of civic competences, we should refer to his/her scope of knowledge, skills, attitudes, behaviors, and willingness to participate. The results of international ICCS⁴ study from previous years regarding people's civil knowledge and attitudes indicate that although Polish students are generally within the European average, they show the smallest increase in civil knowledge (Wiłkomirska, 2011, p. 59) compared to the previous period covered by similar research (1999–2001). The attitudes of school headmasters and teachers towards the goals of civic education are also interesting. The number of headmasters and teachers of Polish schools who pay attention to the importance of 'promoting the student participation in the life of the local community' and 'promoting the participation in school life' is higher than the European average. Significantly below the European average is the number of headmasters who believe that the purpose of civic education is to 'teach students to defend their beliefs' and 'to maintain the development of effective strategies to combat racism and xenophobia.' Also, below the European average is placed the number of indications that the goal of civil education is 'to develop critical and independent thinking among students' (Kerr et al., 2010, pp. 128–129). It is worth to supplement these observations with the notes of Hanna Świda-Zięba about the disturbing symptoms of 'moral anomaly' occurring in the Polish society. The growing importance of individualism, individual autonomy, freedom of choice, combined with the characteristic understanding of responsibility perceived primarily in the context of own actions *are not conducive to the creation of mechanisms of social moral control, and therefore the violation of ethical standards (also those that are individually recognized) will not be condemned* (Świda-Zięba, 2010, pp. 69–70).

Such targeting at individualism creates a difficult situation for socializing institutions. The issue becomes even more problematic when taking into account the lack of a universally accepted canon of essential values, attitudes, and moral orientations indispensable in the circumstances of increasingly pluralistic, multicultural societies and competitive ethical systems, worldviews, and hierarchies of values. There are dilemmas related to the

perception of the meaning of life, undertaken actions and building a foundation for one's own identity. Janusz Marianski (Marianski, 2014, p. 100) points to the particular trends in the Polish society concerning the importance and sustainability of pro-social values, defining them as transformations from a community (pro-social values) to individualism (egoistic values), from postulated pro-social values to practical individualism. The contemporary world becomes more and more multicultural, economically polarized, divided because of politics or religion. It shrinks, becoming a 'direct environment' for a substantial part of the human population, accessible directly by accelerated growth of spatial mobility and new technologies. There is a question about how this shrinking world affects its perception and comprehension. It is also worth noting that the ability to initiate dialogue and to function in a multicultural, diverse world, simultaneously maintaining the balance between being faithful to important values of one's own culture and the willingness to accept the value of a different culture becomes the fundamental problem.

The challenges for socialization formulated in this article refer to several areas. The first area is the capability to navigate in the complex world of economic relations, including not only a good understanding of micro-, mezzo- and macroeconomic processes, but also developing entrepreneurial attitudes or the ability to choose profession correctly. The second area is the ability to be a citizen in a democratic society. Unfortunately, there is no simple recipe for activating or 'politicizing' citizens and encouraging them to conscious participation in the formation of their social environment. Education, improving the knowledge, understanding the term 'citizen' and shaping a system of pro-social values and attitudes are vital there. The third area regards functioning in a multicultural world by understanding the difference between 'otherness' and 'strangeness', developing the ability to accept diversity and perceiving its opportunities, not threats.

Children's University as an adequate form of children socialization

The role of formal educational institutions in the processes of socialization about the challenges of the modern world is visible. However, those places have significant disadvantages. They may be not flexible enough. They do not guarantee a multidimensional approach to the presented issues, and they not always react quickly enough to the changing needs. In such conditions, the informal institutions have a special mission, which is implementing the principles of lifelong learning and life-wide learning. Piotr Zbie-ranek points to the characteristics that make the

⁴ International Civic and Citizenship Study – the research conducted by The International Association for the Evaluation of Educational Achievement. The data quoted in the paper come from the study carried out in 2009, Poland did not participate in the second edition of the study in 2016. The next one is planned for 2022.

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out-of-school education stand out. This sector of education develops in line with identified challenges and needs of the social environment. It is open to cover new topics and add issues that are not included in the formal education program. It also applies different means of motivating for participation and its unique 'teaching philosophy.' This philosophy allows for more flexible methods of knowledge transfer, interdisciplinarity and for the elimination of rigid divisions between 'a teacher' and 'a student' (Zbieranek, 2011, pp. 9–13).

One of such institutions that may respond adequately to the need of providing children with knowledge and competences required for conscious and active participation in economic, social, cultural and political processes is a children's university. It worth noting, that stimulating curiosity and willingness to ask questions are the main priorities in the educational process implemented by the children's universities. The questions asked by children became the inspiration for the creation of the first Kinder-Uni in Tübingen in 2002. The first lecture gathered 400 young students who could then get the answer to the question 'Why do volcanoes erupt?'. For the second lecture, the largest university auditorium was chosen, but even then, 1000 children could hardly fit in the room for 700 people. During other lectures children could find answers to other important issues such as 'Why is human cloning banned?', 'Why are some people rich and others poor?' or 'Why do people die?'. Children were fascinated with their student status not only because of the possibility of getting answers to their questions. They were also happy with the right to follow the real academic customs. Even the youngest students have the right to start their classes with 'academic grace period.' They could express their applause by tapping of fists on the tables. They have real student IDs and the privilege to eat in the university canteen⁵. All these circumstances created the situation of so-called positive distinction, which attracted other young students.

The model of one-way transfer of knowledge still dominates in many schools. The child takes the role of 'a learner,' which is not very attractive to contemporary young people. It is much more interesting to solve problems or to develop one's interests and passions. Asking questions is quite often difficult and may result in a so-called 'silent audience.' A lecturer cannot be sure then if the students listen to the lecture or not. Children are usually 'not aware' of this difficulty, which means they have no fear of participating actively in the class and asking questions, they do not anticipate it as showing their ignorance. Even if it is not always easy to find a satisfactory answer to all the questions but prompting students to search for explanations becomes an exciting challenge, both for lecturers and children. According to the research on

the effects of taking part in the classes of children's universities in Great Britain (Children's University..., 2017, pp. 41–45), this kind of educational institutions not only offers attractive activities for children but also enables developing crucial competences. It refers both to the skills included in school programs and to those concerned being less critical and not included in formal education. According to that research, children participating in the activities of the children's university developed their mathematical skills and learned to read much more quickly. As for the other abilities, the most important are competences required for teamwork, the capacity to understand the others (empathy) and a higher level of communication. Building self-confidence and the interest in one's future as well as spotting that learning new things may be 'enjoyable task' are equally important.

The children's university mission is to create an educational environment stimulating creativity and to develop intellectual and social capital. James J. Heckman (Heckman, 2011, p. 31), the Nobel Prize winner in economics in 2000, repeatedly emphasized the importance of investing in the child's development from an early age. In 2011 he wrote that those who would like to reduce deficits and strengthen the economy should invest in the education of the youngest. Each year when children (especially from dysfunctional families) are left without support for their development and education, their chances of reducing future inequities diminishes significantly. That is a forward-looking strategy that allows avoiding economic and social costs in the few decades.

For many years, the European Commission has been undertaking initiatives related to acquiring key competences, including civil competences which play an essential role in society. European institutions pay particular attention to activities that encourage young people to participate in social and civil life. They allow them to create a strategy for 'social unity and equity' (Edukacja obywatelska w Europie, 2012, p. 7). Authors of the report emphasize the necessity of going beyond the school's microcosm and using other than school sources of knowledge and competences (Edukacja obywatelska w Europie, 2012, pp. 61 and n.).

Children's universities created by the higher education institutions are particularly well suited to perform these tasks. First of all, they can involve in the teaching process the academic staff including lecturers and researchers, as well as the universities' infrastructure (e.g., scientific labs). Furthermore, they are not constrained by the core curriculum and school evaluations, and thanks to that they have almost endless possibilities for creating more flexible teaching, tailored to children's needs. They can also engage students in preparation of the teaching programs and methods, which encourages a more creative and innovative approach to teaching and learning.

⁵ Based on the materials by courtesy of Michael Seifert – Public Relations Manager at the University of Tübingen

Conclusions

The importance of education has been emphasized in the 'Europe 2020' development strategy. Therefore, investment in education should be one of the key priorities in realizing the vision of the future world, which could fulfill social aspirations and expectations. The main goal of the European 'Youth in Action' Programme, implemented several years ago, was to enable young people to improve their competences in various areas, both social and economic. Among those competences, innovativeness, creativity, and design thinking played a significant role. That program offered multiple training events provided by non-formal educational institutions, outside the national education system (Wochowska, 2014, pp. 17–18). It is worth to be stressed that applying non-institutional forms of education allows for more freedom in creating educational programs and using innovative teaching methods aimed at individualized and non-standard models of learning.

Robert Firmhofer, the director of the Copernicus Science Center, evaluating school as an educational institution, has pointed to problems with adjusting the educational projects to social expectations and contemporary challenges. *There is a huge gap between knowledge and skills obtained by pupils at school and those they really need to achieve success in their future personal or professional life. To some extent, this situation is the result of the character of the school, which is a conservative institution by its nature* (Firmhofer, 2012, p. 11).

Looking for new models of education, OECD formulates various concepts and visions. The following approaches are proposed:

- to maintain the current school model with some necessary modifications, in other words – the status quo;
- to transform a current school model into a social education center that could respond to the changing social needs, especially in the area of a civil society development and strengthening of democratic values – re-schooling;
- to abandon the only one school model (or even the idea of a school as an educational institution) and utilize instead the possibilities of the network society what in turn should lead to diversification of educational offers and new ways of knowledge delivery – de-schooling (Kołodziejczyk, Polak, 2011, pp. 20–24).

In the ongoing discussions on the best, most effective future model of education, the institutions that implement concepts of life-long-learning and life-wide-learning may (and should) play a significant role. As it was mentioned above, thanks to their unique features and their potential, the children's universities may provide a complementary and more flexible educational offer.

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Abstract

For three decades, Polish society has been confronted with new expectations and challenges related to the transformation of virtually all areas of life. It has to deal with many problems, as well as with the necessity to acquire new competences, skills, and knowledge in various fields. In this article, the author has identified several key challenges. They refer especially to obtaining capabilities needed for active participation in the market economy and civil society. Social values enabling integration are of key importance among them. According to research cited in the paper, Polish society has insufficient knowledge and competences in these fields. Simultaneously, they are very desirable in the process of modernization of Poland's economy.

Therefore, it is crucial to ensure that the socialization processes, both formal and non-formal, are adequate to the needs and expectations of the society. It is difficult to overestimate the value of the opportunity to explore freely, to ask questions, and to be allowed to find a solution to a given problem because such experiences support the development of key competences indispensable for proper functioning in the modern, dynamically changing world. In this article, the author points out a vital role of non-formal institutions, particularly the children's universities, which are more flexible and may have an impact on creating the concept of the future more personalized education.

Key words: civil society; integration values; economic competences; civil competences; socialization processes; the children's university

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Children's drawings and their analysis as a method supporting understanding of concepts in workshops at children's universities

Katarzyna Sanak-Kosmowska*

The article presents one of the most popular projection techniques – a drawing analysis – as a tool supporting the activity of participants in the workshop classes at children's university. In particular, the indicated method can be used for doing the tasks devoted to social and economic phenomena, in which children often participate and which are not always understandable to them. It should also be emphasized that drawing is a natural form of expression employed by children. Considered in terms of development possibilities, the way of drawing and the content, the drawing can be applied either in preliminary phase when it allows the recognition of children's familiarity with certain concepts, or at the final stage in which the presented issues are visualized by children in the form of a drawing.

Introduction

Drawing is one of the most important manifestations of a child's creativity. It becomes more advanced and sophisticated along with the grow of motor skills during subsequent stages of development. It most frequently presents the real- or fairy-tale – abstract world that usually surrounds a child, resulting from their imagination. In a kindergarten, at school or during additional classes, children prepare artworks on a specific topic. The evaluation of aesthetic values of drawings is common. However, it should be emphasized that the interpretation of children's products can also be made on a different plane. Moreover, the inclusion of drawing in the workshop classes with children is not reserved only for psychologists and therapists. This article aims to present the way of exploiting the projection method, which is a drawing analysis, during educational workshops.

The starting point for designing the concept of a workshop technique based on a drawing analysis will be a review of the subject literature devoted to:

- projection techniques, in particular, a drawing analysis;
- psychological and sociological analysis of a drawing;
- using drawing in the methodology of cognition of child's perspective.

Projection techniques – the definition, types and uses

Projection is an ambiguous concept in psychology. One of the ways of interpreting this term is to understand it as a defensive mechanism through one's assignment to other people the motives or traits which are not accepted in oneself (Frączek, 1964, pp. 181–217). Projection is also defined as an impingement of internal, subjective states of a subject on external reality and its interpretation in accordance with them (among others, Heitzman, 2009, p. 246).

There are different types of projections: classic, attributive, autistic and rationalizing (Lewicki, 1969, p. 100; Rembowski, 1975, p. 291). The classic projection is a well-known defense mechanism outlined by Sigmund Freud. It is based on assigning to other people one's traits or behaviors not accepted in oneself. In turn, the attributive projection refers not only to negative characteristics – it can apply to one's all own features attributed to other people. The autistic projection involves the modification of observations due to one's individual needs. The rationalization projection consists of justifying one's behavior by assigning it to other people.

It should be emphasized that the projection mechanism constituting the basis of the projection methods is discussed not only on the ground of psychology. In addition to diagnosis and psychological therapy, projection techniques are also used in qualitative research aimed at deep analysis of a studied phenomenon, including hidden attitudes. The indicated methods make it possible to get to know and understand the preferences and opinions of the respondents based on what they say (or draw) about other people, things or situations. In this way the respondents create projections constituting the basic human defense mechanism thanks to which an ego defends itself against unwanted or suppressed drives and desires, assigning them to others.

The projection techniques are often used to diversify the course of an interview, which helps to break down barriers, increase the activity of the respondents and supports their freedom of speech. They are used primarily when:

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- a respondent may feel embarrassed and ashamed by the necessity to express real reactions and views;
- topics refer to sensitive issues;
- there is a risk that the respondents will respond in a tentative way to satisfy the author of the study;
- respondents may be wrongly convinced of their rational behavior in a given situation, not realizing the unconscious attitude that is the cause of their conduct;
- respondents may have problems resulting from the lack of adequate knowledge and vocabulary resources to express their views and emotions (this is the case, for example, during the interviews with children).

There are four basic groups of projection techniques (Braun-Galkowska, 2016, p. 18):

- Visual methods – presenting some visual stimulus in the form of a picture or the inkblots. In the case of a picture, the person could be asked for its interpretation, for telling a story about it (for example, TAT, CAT). As regards the inkblots the associations brought to one's mind after seeing them are interpreted (for example, the Rorschach Inkblot Test).
- Verbal methods in which the stimulus is constituted by sentences or stories to be interpreted in any way (for example, the Fairy Tale Test – FTT).
- Play methods, especially exploited when working with children. They are based on the use of puppets, toys, animals and on encouraging children to take roles (for example, the Scenotest by Gerhild von Staabs).
- Graphic methods that require making a drawing – for example, finishing a picture already started (the Wartegg Test) or preparing the own drawing on a given topic.

However, in marketing research, four other groups of projection techniques can be distinguished (Światowy, 2016, p. 192). They are focusing on:

- associations, for example: with words, with a person, an animal, an object, music, or smell. Photographs, personification and the like are often used to evoke stimuli;
- supplements, like the completion of sentences, short stories or conversations, development of supplementary and projection questions;
- constructions, for instance: an expo, a brand party, old photography, personality and gratification sorts, collages;
- psychodrama type expressions, directed fantasy, farewell speech, drawing.

Drawing, which is a non-verbal, pictorial form of expression, mainly used in marketing research conducted among children, deserves special attention. A person doing the research and the instruction given to the participants play a particular role: the tutor should emphasize that drawing is to be treated as a form of fun whereas the aesthetic aspects and the talent of the author will not be evaluated.

Drawing analysis

The diagnosis enabled by the projection methods is meaningful, but requires specialist knowledge, especially when the indicated techniques are used in psychological diagnosis. This kind of interpretation is therefore reserved exclusively for psychologists, pedagogues and psychiatrists, however, the categories of symbols they use, based on associations, may also be useful in other contexts (Braun-Galkowska, 2016, pp. 24–27).

The symbolism of space. It specifies mutual relations between the drawn objects and the characters in terms of the distance between them, the way of arranging the space in the drawing, the interaction between the depicted objects and the characters, and their sizes. Also, the placement of the picture on a piece of paper may be symbolic – whether it is on the left or the right side, at the top or at the bottom of the paper.

The symbolism of colors. The colors used in the drawing speak about emotions and to some extent they can be interpreted using the meanings assigned in the Lüscher Color Test. Also, the number of colors used for illustration should be taken into account in the analysis.

The symbolism of a human body. The completeness of a drawn character, the number of details, the size of characters and the proportions compared to other people in the drawing are the critical elements to be interpreted. However, it should be emphasized, that the manner in which a character is illustrated indicates the level of development and intelligence primarily – the interpretation should, therefore, be made taking into account the stage of a child's development.

The symbolism of animals. Using an animal in a drawing can express an author's identification with this animal, especially if the author does not want to attribute the animal's characteristics directly to himself/herself (for example, courage, strength, and timidity).

The symbolism of objects. The objects in a drawing may result from a given topic or may appear unexpectedly. These can be, for example, items used to express aggression or those related to peaceful activities, inanimate or animate elements (for example, trees, plants) and landscape fragments.

A starting point for a proper interpretation of children's drawing works is knowing the picture development stages. It is also important to conduct an accompanying interview in which the child explains the individual elements shown in the picture. It may turn out that, for example, a drawn cat is simply a domestic animal and not an unexpected element that appeared as the result of the projection.

The stages of a drawing development

Following what Stanislaw Popek suggested (2010, p. 191, quoting: M. Verworn, 1917), the division of the development of children's drawing into the ideoplastic and physioplastic phases was adopted in the literature on the subject. The indicated stages are closely related to the psychophysical development of

a child. The ideoplastic phase lasts until around eleven years of age and is characterized by dynamic growth. Stefan Szuman (1990, p. 9), on the basis of a long-term study of children's drawings, distinguished three main stages of a drawing development:

- 1) A stage of scribbling, that is, the formation of the schema.
- 2) A stage of a schema (ideoplastic phase). Drawing according to the so-called simplified scheme.
- 3) A stage of an enriched schema (development towards physioplastic phase).

Other authors, such as Georg Kerchensteiner (1905), Cyril Burt (1947), June K. McFee (1961), Viktor Lowenfeld (1964) and David H. Feldman (1980) proposed slightly different names for individual stages. C. Burt, for example, distinguished 4 phases in the stage of scribbling (purposeless, purposeful, reconstructive, localized), and the ideoplastic period was divided by him into the stages of line and descriptive symbolism. In turn, V. Lowenfeld indicated chaotic, controlled and named scribbling. While analyzing the proposals of various authors, some features characteristic of the subsequent stages can be identified (Chmielnicka-Plaskota, 2014, p. 20). The scribbling stage, during which a scheme develops, appears in children around the age of three. First drawings are created mechanically and largely correspond to the entire arm movements without the eye control. In this phase of development, a child holds a pencil or a crayon with the whole fist. It successively helps itself with fingers and its hand, then with its elbow. After the period of random scribbling, the so-called controlled scrawling develops. At this time, the child achieves considerable control over the hand movement and the drawing movement. The movement becomes delicate and more accurate. Over time, the child gains control over the drawing movement and draws the imagined items, for example, dashes, zigzags, points, dots. A significant moment in the scribbling phase is the transition to drawing circles or polygons. The ability to draw these figures enables the child to draw objects. In this way, it closes the connected shapes or objects in a visible and understandable way for both the recipient and itself. Stefan Szuman claimed that the development of speech precedes child's drawing development. A child in the third year of life, looking for basic elements of drawing, usually speaks quite well (1990, p. 15). While learning to draw, the child firstly draws the features of the subject he or she is already familiar with. The child does not draw an object in the way it appears in reality. These are poor, schematic and not very expressive sketches. First human figures called 'cephalopods' appear in the scribbling phase.

The drawings displaying cephalopods are typical for the youngest children. In the period of the scheme, falling into the pre-school age, they prevail in artworks; with a child's development, drawing becomes more complex, and – after drawing the torso and hands – the cephalopods change into a simplified human scheme. More and more thematic pictures appear, and

the content is dominated by a human form, a house, and vehicles. The drawing is closely related to a child's thinking based on perception. The child most willingly draws the figures and objects he or she spotted, so they are closely linked to its observations.

On the other hand, children in pre-school age whose perception is not limited to the real world often use colors that – as it may seem – do not reflect real images (Lasota, 2016). Around the age of 4 and 5, the ability to plan the space on the surface on the sheet of the paper develops. Disproportions are also characteristic for children at this age (preferred items or characters are bigger than those avoided).

School-aged children, from around the age of 6, begin to include more and more details in their drawings, improve proportions and express the space relations using belt systems. S. Szuman (1990, p. 41) described this stage as a 'phase of enriched schemes.'

After the ideoplastic period, around the age of eleven, the second phase – physioplastic – develops. During this period, the stages of emotional and intellectual realism are distinguished (Popek, 1999, pp. 253–254). The child becomes critical of its own creations, and its drawings reflect the naturalistic perception of the world.

Regardless of the children artistic creation phase, their drawings are a source of knowledge on children's personality, feelings, and experiences. The research shows that besides the possibility to obtain information about the inner sphere and the life of a child, undertaking creative activity by implementing various art techniques influences child's intellectual and emotional development. Children on the borderline of intellectual disability and children with a slight disability achieve the scheme stage in their work, not entering the higher level of artistic development – physioplastic phase (Tyniowski, 1986, p. 81).

Françoise Minkowska (1950, quoting: Braun-Galkowska, 2016, p. 50) distinguished two types of drawing: sensory (emotional) and rational. Emotional drawing is characteristic of spontaneous people who value the relationships and closeness of social bonds among the family members. The lines in their drawings are curved, rounded, dynamic, and the actions of the characters are captured. The rational type of a drawing expresses in straight and rigid lines. The presented figures are stationary and static. Such drawings are made by people inhibited by internal censorship and subjected to the rules.

The use of a drawing analysis during workshops at children's university – the workshops proposal

During the classes conducted at children's universities, social topics are often raised, as part of the tasks related to civic education. The knowledge and the way of understanding abstract concepts related, for example, to ethics, civic responsibility and a description of social phenomena are often the combination

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of attitudes of parents or other caregivers, school knowledge and information obtained from peers and from the media. It means, therefore, that the way in which these terms are interpreted is individual and is based on a child's specific experience. Frequently, young participants of children's universities correctly understand a phenomenon, but they cannot accurately describe it. In that case, the methods based on a child's creativity could be recommended. Drawing is one of such techniques as it helps to visualize children's associations with a chosen concept.

Children's drawings are an 'entrance gate' facilitating access to their views and experiences. The analysis of their work and paying attention to the narratives and interpretations made by children themselves constitute a valuable source of information which – along with the involvement in the artistic process – a young author eagerly shares (Clark, 2005, pp. 489–505).

A common way to include children's artistic creativity in the didactic work at children's universities are workshops during which they are asked to draw a previously discussed concept or to illustrate the lectures and presentations they already listened to. It means, therefore, that children visualize the phenomenon defined by a tutor in their individual, characteristic only for them, way. Art contests organized by the Children's University at the Maria Curie-Skłodowska University in Lublin may serve as an example of such activity.

The children participate first in the meeting after which they are encouraged to create an artistic work illustrating the topic being discussed (among others: 'The creation of the world according to Tales or Pythagoras' implemented in 2012 or 'Maria in the laboratory in 2017'). At the Children's University, operating at the Cracow University of Economics children are encouraged to submit pictures that are artistic summaries of the lectures and then the works are printed in a special supplement to the university's magazine, 'Kurier UEK.'

It is also possible to start the discussion on the selected topic by asking children to illustrate the concept or the issue first and then talk about their interpretations. Such an approach is more individualized and allows better recognition of knowledge the children already have as well as adjusting the content of the class to that knowledge.

It is worth to be stressed that the students of children's universities usually attend different schools; therefore, the described reversed approach can also be an opportunity to find differences in the perception of individual concepts and in consequence to systematize prior knowledge just at the very beginning of the joint work. The initial drawings may also help to identify those aspects of the discussed issue which require special attention; and in a case when some symbolic elements (originating, for instance, from fairy tales) appear in many children's works, it may suggest the examples to be used during the workshops.

The ideas mentioned above aim to exemplify how the drawing method may support classes at the children's universities either as a means of concluding the

discussion and verifying the proper understanding of the presented issues or checking participants' initial knowledge and their views. It is also possible to analyze the language of artistic expression (concerning the applied means of expression, creative values or content analysis). However, it should be remembered that the drawing analysis may refer only to the level of knowledge or understanding of the topic discussed, not to the assessment of a child's development and its relationship with the environment. This type of diagnosis should be reserved for specialists in the field of psychology and pedagogy.

The drawing method – due to its attributes – can also be successfully used as a tool for qualitative research conducted among students of children's universities. However, it should be emphasized that in such a case it is necessary to obtain legal guardians' consent for children's participation in the research project and to provide full and understandable instructions as well as information on the further use of children's works. Many researchers (including Bland, 2018, p. 343) have successfully applied the discussed tool as a primary method of qualitative research conducted among primary school students.

The Polish-American project on applying the drawing method for the work with children was developed by the team of the researchers: Professor Jacqueline Johnson from the University of Minnesota Morris, Professor Anna Karwinska and Doctor Katarzyna Sanak-Kosmowska from the Cracow University of Economics. The research was carried out in March and April 2018. The project involved students from elementary schools in Minnesota and Cracow. In total, 67 Polish and 70 American children took part in the research. As part of the study, the children were asked to prepare two drawing works: 'This is America' and 'My country, my homeland' or 'My city.' In the first stage of the research, the children worked independently, creating their artworks. In the second stage, during the individual structuralized interviews, the children described their drawings, explaining the meaning of each visual element of their piece of art. It should be emphasized that due to the lack of a set interpretation framework of the given tasks, project participants have created various works – from realistic to abstract. After finishing the drawings, they were eager to talk about them, explaining what and why they decided to draw. It can, therefore, be assumed that the information obtained in this way is more comprehensive than acquired through declarative methods. The method of competent judges was used to analyze the results. First, a drawing evaluation form was developed, specifying, among others, the undertaken subject (assigned to the selected category, for example landscape, people, politics, symbols), the number of elements depicted in the drawing, the number of people included in the picture, the work layout (horizontal or vertical orientation) and the number of colors used. It is expected that the results of the analysis of the drawings – those made by Polish and American children – will bring the information

about similarities and differences in the interpretation of the surrounding world by both groups of the research participants. The results will be published in 2019 on the project website as well as in the selected scientific journals on social and civic education.

Conclusion

The analysis of the drawing, the methodology of which is linked to the projection techniques, is widely used research and diagnostic tool, successfully applied by specialists in the field of psychology, sociology, and marketing. It seems, however, that their application may be broader – both as part of the workshop work and a research tool during the classes at children's universities. The latter may refer, for instance, to the understanding of social phenomena introduced in the class. There are two possible scenarios for the use of drawing works. Firstly, it can be a method of consolidating and checking whether the concept has been adequately understood by the class participants – then it is worth asking the audience to illustrate the chosen phenomenon or issue. Secondly, a drawing work followed by the interview with a child provides the opportunity to learn about and discuss the way children perceive the world around them. It allows obtaining valuable qualitative data and thus avoiding the necessity to employ declarative research.

Using the drawing and its interpretation is a subjective method because it refers to a personal way of perceiving the world by an author. Its analysis requires professional knowledge about creativity, the stages of child development and intuition. Applying this method in practice, also as a part of classes for the youngest, should go hand in hand with proper substantive preparation and great mindfulness.

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Abstract

Drawing is for a child a form of play and a way of free expression. At the same time, it is an opportunity to develop imagination, creativity, and knowledge about the surrounding world. For psychologists and therapists, a child's drawing, as part of the projection methods used, is a source of knowledge about its emotions, personality, and situation. Also, the marketing specialists make use of projection techniques, including projection drawings, for instance, to study the behaviors of youngest consumers.

The article aims to present the way of using the projection method, such as a drawing analysis during the educational workshops and for qualitative research conducted among the youngest.

In the first part of the article, the subject literature on projection techniques, in particular on a drawing analysis is reviewed. In the further part, the stages of a child's drawing development along with their characteristics are presented. The last section illustrates the proposals for the use of a projection drawing as part of the workshop work with children and an example of such activities are given. It should be emphasized that the use of projection methods requires educators to possess knowledge, sensitivity, and caution in the interpretation. Children's drawings differ concerning their artistic talents, age, stage of development and symbols used. The proper understanding of the last sphere is a very complex process.

Key words: a child's drawing; a drawing development; projection methods; social education; civic education

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Tinkergarten

Tinkergarten is the American initiative which provides education for the youngest in the most natural classrooms – in city parks and forests. Anyone who cares about teaching in nature can become a leader. The appropriate training, as well as the teaching materials, are provided by the organizers.



The Tinkergarten official website and blog are used to ensure the proper contact between the class leaders and parents and to support the exchange of learning activities and any ideas among the community members.

The approach 'learning by playing' is applied during the classes – in the pictures children 'cook' the soup using spices they have brought, make decorations from what they have collected around them and learn how to recognize the trees by their leaves. Pictures were taken during the class in Atlanta in autumn 2018 with a leader Erica Williams.

Source: Editor's own materials.

Economics in shorts, that is the Children's University of Economics and the Academy of Young Economist



Milena Więckowska*

Nowadays, reality poses many challenges to education resulting from technological development, broad access to information and fast pace of life. The attempts to meet these challenges influence the educational market. Today, modern education includes not only the school classes but also a full spectrum of extra-curricular activities. The academic type of lectures for children (the so-called children's universities) plays a significant role among them. Is this offer well suited to the needs of young people? Do the tools and methods used in children's universities give tangible results?

Introduction

Variability is one of the most characteristic features of the modern world. The dynamic development of new technologies affects a human being by changing his/her way of working and living. The internet, Facebook, smartphones, globalization and civil society are the concepts that either did not exist 20 years ago or at least had a different character and scope. Their development has significantly changed the world in all spheres of our lives.

Education faces particular challenges nowadays, which implies the increase in the number of functions that educational institutions should fulfill. The role of a modern school is not only to prepare students for future professional work but also to make them acquainted with lifelong learning, what would enable them to extend further their comprehensive education (Yegorov, 2010, p. 6). It is often associated with the 'expansion' of education outside the school – nowadays many local self-government or non-governmental organizations, companies, and individuals are involved in the education of young people (Ziółkowski, 2016, pp. 5–6).

In recent years, also the universities engage more willingly in the education of children under 16 years of age. They actively implement the idea of lifelong learning, popularizing and disseminating knowledge and integrating educational environments (Ziółkowski, 2016, pp. 5–6). Their external educational offerings are

usually similar to the activities they conduct on a daily basis. However, the academic activities are modified according to the age and the needs of the recipients. Children's universities are the example of such initiatives. They establish the environment for the meeting of curious and open-minded young people with the researchers, whose deep knowledge and scientific experience may stimulate the comprehensive development of the youngest. The greatest effort is put, however, not on providing the sophisticated expertise in specific areas or disciplines but on encouraging the young students to investigate and to ask questions – arousing the curiosity combined with the possibility to develop one's individual talents and abilities, supporting the interest in science and technology in children (Ziółkowski, 2016, pp. 96–97).

The beginning of children's universities dates back to 2002. Then the first project of this type started at the University of Tübingen in Germany. Classes for children aged 7–12 were conducted by the university lecturers, who explained in an accessible way issues related to nature, human physiology and cosmos. Based on the success of those first lectures, 70 initiatives of that type were created in Germany, and the idea of the children's university also spread to other countries, both in Europe and in the world. Non-academic centers, local authorities, and non-governmental organizations got involved in establishing children's universities¹.

In Poland, the first children's universities were created in 2007, and on May 26, 2007, the first lecture at the children's university took place. The popularity of this idea has led to the rapid growth in the number of children's university centers, exceeding a hundred in 2015 (estimated data).

Initially, they operated mainly in large cities, at well-known universities. After 2012 – due to the increase in expenditures on non-formal education and the emergence of subsidies from EU funds – such institutions also appeared in smaller towns outside academic centers. Unfortunately, a majority of those universities suspended their activities when the inflow of the public fund ended².

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¹ <http://www.dzieci.edu.pl>

² Ibidem.

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Children's universities in Poland are organized by various institutions, but the general structure of classes, the age of children they are addressed to (usually 7–12 years with some extensions of that range) and a non-obligatory form of education are what they have in common. The lectures proposed by the children's universities are held regularly, in a manner corresponding to the organization of the school year (two semesters of classes).

The primary role of the lectures at children's universities is to convince students that learning can be a pleasure and a passion. The classes have different forms and are based on the use of attractive didactic methods and tools. Young students have the opportunity to 'try out' what does it mean to study by listening to lectures or participating in 'serious' discussions with scientists. They can also practice solving problems and make the practical use of knowledge by carrying out experiments or participating in the workshops³. The Children's University of Economics and the Academy of Young Economist apply a similar model, but they mainly focus on expanding the economic knowledge among the youngest, and that is the reason why they deserve special attention among the Polish institutions of this type.

Basic information on the form of organization and activities conducted by the Children's University of Economics and the Academy of Young Economist

The Children's University of Economics (EUD) is an initiative of the Foundation for the Promotion and Accreditation of Economic Education (FPAKE), an independent institution established by the Conference of Rectors of Economic Universities, which goal is to support the economic and managerial education in Poland. In 2008 the Foundation started the EUD project in cooperation with the SGH Warsaw School of Economics, where the first EUD center was established. Children aged 10–13 were invited to participate in classes on several topics from the field of economy. A year later, at SGH Warsaw School of Economics a 'sister' program of the Children's University of Economics, the Academy of Young Economist (AME) started. It was addressed to students aged 13–16. Both initiatives aimed at popularizing knowledge and building economic awareness among the youngest and providing their parents with information facilitating proper economic education of their children.

Since the launch of the Warsaw centers, FPAKE has been continuing the activities of the two children's universities, establishing cooperation with other economic universities in Poland. At present, EUD/AME centers successfully operate in eight locations: at SGH Warsaw School of Economics, at the University of Economics in Katowice, at the University of Economics in Wrocław, at Poznan University of Economics and Business, at the

University of Szczecin, at the Gdansk University of Technology (EUD only) at the Bialystok University of Technology (EUD only) and at the University of Lodz (AME only). Both projects operate in the semester system. For each of the two semesters in a given school year six two-hour classes for pupils and simultaneously six meetings for parents are prepared.

The lectures for young people are carried out in accordance with the plan prepared by FPAKE experts, adjusted to current economic realities and to groups of recipients at every center. In each edition of EUD/AME, the meetings held for students address the selected issues from six thematic blocks: 'Management,' 'Marketing,' 'Economic environment,' 'Entrepreneur's finances,' 'Business practice' and 'Effective improvement'. Meetings for parents include topics in such areas as: 'Art of education – the role of a parent,' 'Psychology and social interactions,' 'Economy at home,' 'Economic life,' 'A child and media' and 'Effective education'.

Classes for children include a 35-minute lecture, the workshops in groups lasting about 25 minutes, and a time for presenting and discussing the work done. For that last part again, the whole cohort gathers in the lecture hall and the conclusions are formulated. During the workshops, young students have an opportunity to take on different roles: team leaders, negotiators, stock investors, and marketing specialists; they learn how to work as a team, how to think and plan the work independently.

The lectures for parents aim at facilitating the economic upbringing of children and preparing the caregivers to shape entrepreneurial attitudes and behaviors among the youngest, by providing them, for instance, with knowledge on the rational management of money, sensitivity to ethical issues and safe use of available technology.

All project meetings (for children and parents) are conducted either by academic teachers from the partner universities or by external experts. Each lecturer has an opportunity to become acquainted with the *Lecturer's Guide*, created for the needs of projects based on many years of experience. The guide offers, among other things, tips on how to get prepared for conducting the classes with a young learner, how to explain difficult issues to children and what types of activities may be appropriate. Thanks to this, the level of difficulty of the communicated knowledge and the language of lectures are adjusted to the age of the recipients. Accessibility of the content is enhanced by various types of multimedia visualizations and interactive character of meetings (a combination of lecture, discussion, workshop and public presentation of the results of the joint actions). Due to a relatively young age of EUD/AME students and a large number of participants in the groups, the students of economic faculties and psychology are encouraged to volunteer as students' groups' caregivers.

Before the first class young EUD/AME students receive the special printed indexes, resembling traditional

³ <http://www.dzieci.edu.pl>

student documents. Every time they participate in the lecture, they collect the signature, which is a confirmation of attending the meeting. The collection of 4 out of 6 stamps entitles them to receive a certificate of the completion of a given program. The document is signed by the representative of the university authorities, where the EUD/AME classes were held. Persons who took part in all six lectures in the semester can be awarded by a special diploma.

There is a knowledge test for students at the last meeting of each edition of classes. Getting the certificate of completion does not depend on its results but its role is to indicate the best students. Within 10 minutes, students answer 15 questions chosen from the issues prepared by each lecturer, earning points for each correct answer and losing them as a result of mistakes. Those who achieve the highest score for the test receive valuable prizes (three EUD students in each center, one AME student). The gifts play a role of positive reinforcement in the educational process.

The activities of EUD/AME can be followed on the projects' websites⁴ that include, among others, the current (and archival) programs of classes, educational materials for lectures in every center (published regularly after each meeting), video reports from classes and photo galleries. They provide a rich knowledge base for the internet users of all ages, including teachers.

Those websites are also useful for students of the FPAKE children's universities giving them a chance to revise the discussed material, catch up on absences and learn about the lecturers. Parents can track the work of their children and get an idea about the topics of the lectures offered to them. The project websites also provide the electronic recruitment tools (application forms) for subsequent EUD/AME editions.

Why is it worth to teach children economics?

The Children's University of Economics and the Academy of Young Economist have been successfully operating on the Polish educational market for many years. Where does the continuous interest in their classes come from? What is the reason for the popularity of lectures in economics – a field that for many people is associated only with boring deliberations?

The changes in Poland after 1989 contributed to the revolution in the economy of our country. A number of financial institutions such as the stock market, banks, and retail chains emerged and developed dynamically on the market (Przybytniowski, 2017, p. 61). In consequence, a completely new economic reality was created. In order to find oneself efficiently in it, a large part of our society had to extend their actions in that area. This entailed a certain but still insufficient increase in knowledge and economic awareness (Kołodziej, 2014, p. 104).

The general knowledge in this field is still relatively low among Poles. They are not familiar with the issues

underlying the economics, they do not know the rules of tax and banking systems, they are not aware of how to effectively protect and multiply their financial capital, cannot realistically assess financial risk (The Report of the Institute of Freedom and Raiffeisen Polbank, 2014, pp. 7, 12).

The gaps in economic knowledge result from the manner in which information in this field is acquired in our country. Most Poles 'learn' economics in the labor market, therefore, the economic knowledge of professionally active adults is higher. Among young people who have not yet undertaken any paid employment, knowledge of basic economic concepts is definitely weaker (The Report of the Institute of Freedom and Raiffeisen Polbank, 2014, pp. 7 and 12). Unfortunately, Polish teenagers lag in this field behind their western peers. Young Poles usually build their economic knowledge on accidental pieces of information from the media, which means that their knowledge is often fragmentary, incoherent, full of distortions and stereotypical judgments (Kołodziej, 2014, pp. 99 and 104). Moreover, adults cannot help much because they lack the necessary knowledge in this area as well (Górski, 2016, p. 143).

The data mentioned above indicate a strong need for universal economic education. The knowledge in this field among Polish society is inadequate to the complexity of the surrounding economic world, and the gaps in its foundations limit the possibility of efficient functioning. Making bad economic decisions entails serious consequences, affects not only the quality of people's lives but also the daily family-social relationships.

Fragmentary economic knowledge of Polish society is not the only problem. Another serious deficit is the low economic awareness of Poles. Many people do not realize the need for a thorough knowledge of economics, and what is more – they are not fully convinced of the ethical nature of its use and underestimate the tangible benefits that result from it (Górski, 2016, p. 144).

Understanding the mechanisms of a contemporary economic market is a key to smooth functioning in the world and to the development of skills necessary for making optimal decisions. Unfortunately, the flow of knowledge in this field is very often accidental, and such topics are not obligatorily included in the education at the basic level. As a result of these discrepancies, the issue of extracurricular but in some way formalized and systematized dissemination of economic knowledge among children becomes very important. This was noticed by educational institutions and other entities operating on the financial market (for example foundations and banks) that joined the process of economic socialization by offering various initiatives that equip young people with basic tools indispensable to understand activities and economic decisions taken by adults in their household and professional environment (Górski, 2016, p. 144).

⁴ <http://www.uniwersytet-dzieciocy.pl> and <http://www.gimiversity.pl>

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Therefore, the possibility to acquire such information while participating in the additional activities of this type becomes crucial as nowadays young people begin to be actively involved in the economy quite early, for example by receiving the pocket money on regular basis (the 6th grade elementary school students receive an average of PLN 87 and 3rd grade gymnasium students – around PLN 120), and can manage it on their own. The research shows that only one out of three students receiving their pocket money save it. However, they usually do not do it in a planned and systematic way. Students usually save funds that are left at the end of a given month and keep them at home. The vast majority of young Poles does not have economic knowledge enabling them to use various financial instruments (The results of the quantitative study for the Department of Education and Publications of the National Bank of Poland, 2014, p. 6).

The idea in practice: some statistics

The EUD/AME project enjoys unflagging interest among the offers regarding extracurricular economic classes existing on the Polish market. Every year, more than 1200 children aged 10–13 are invited to EUD

meetings in various places around Poland and more than 1000 students aged 13–16 to AME lectures.

Both FPAKE children's universities undergo regular evaluation. Every semester the opinions of students, their parents, lecturers, volunteers as well as of other people involved in preparing the lectures are collected. The analysis of the evaluation results shows that the EUD/AME offer responds properly to the needs and expectations of the participants.

The results of anonymous surveys, collected before the last meeting of each cycle, show that about 95% of students are satisfied with the activities offered by EUD/AME (in 2017 it was on average 96.73% of EUD students surveyed and 94.59% of AME participants surveyed). Most children do not have problems with understanding the content – in 2017 only a few percent of the respondents admitted that the language of lectures was incomprehensible to them (on average 1.25% of EUD students and 2.72% of AME students). Young people also highly appreciate the form of classes – in 2017, about 90% of the students surveyed pointed out that they enjoyed workshop classes (on average 90.96% of EUD students surveyed and 89.68% of AME students surveyed).

The satisfaction with the EUD/AME offer can also be noticed while analyzing the responses of the young stu-

Table 1. The aggregate results of the evaluation questionnaires filled in by students participating in the EUD/AME classes in 2017*

Selected question from the evaluation survey sheet	EUD		AME	
	Answers given (average from all centers)		Answers given (average from all centers)	
Are you satisfied with the participation in the classes of the Children's University of Economics/ Academy of Young Economist?	summer 2017	winter 2017	summer 2017	winter 2017
Yes, I am very satisfied.	63,70%	67,20%	60,89%	50,88%
Yes, I am quite satisfied.	34,87%	27,69%	34,71%	42,70%
No, I am not quite satisfied.	0,30%	3,18%	2,65%	4,48%
No, I am not satisfied.	0,83%	1,15%	1,15%	0,66%
No opinion.	0,30%	0,78%	0,60%	1,28%
Is the language used by lecturers understandable to you? Circle the phrase that best fits your assessment.	summer 2017	winter 2017	summer 2017	winter 2017
The language is simple and uncomplicated. I have no problem with understanding what lecturers say.	56,73%	49,19%	55,22%	49,83%
I rather have no problem with understanding the lectures, although sometimes there are concepts in them that I do not understand.	42,67%	48,14%	40,20%	45,17%
The language is difficult. Lecturers often use words which I do not understand.	0,60%	1,90%	3,15%	2,30%
No opinion.	0,00%	0,77%	1,43%	2,70%
How do you rate the workshop activities (that is, the classes when you worked in a group and created works together with other participants)?	summer 2017	winter 2017	summer 2017	winter 2017
I liked them a lot.	51,85%	60,77%	52,94%	44,95%
I liked them.	37,91%	31,39%	39,20%	42,28%
I did not quite like them.	5,38%	2,73%	5,88%	8,27%
I did not like them at all.	3,77%	2,89%	1,17%	2,26%
No opinion.	1,09%	2,22%	0,81%	2,24%

Source: Author's own study. *The data were collected in five EUD centers and six AME centers in the summer semester and in six EUD centers and five AME centers in the winter semester.

Table 2. The aggregate results of parental evaluation surveys regarding students taking part in EUD/AME classes in 2017*

Selected question from the evaluation survey sheet	Answers given (average from all centers)	
	summer 2017	winter 2017
Did the EUD / AME classes increased the economic awareness of your child?		
Definitely yes.	30,62%	40,57%
Yes, to some extent.	59,16%	53,15%
Not quite.	0,83%	1,02%
Definitely not.	0%	0,62%
Hard to say.	3,68%	0,62%
No opinion.	5,71%	4,02%
Did the classes for parents and caregivers meet your expectations?	summer 2017	winter 2017
Yes, the classes fully met my expectations.	62,17%	41,49%
Yes, the activities partly met my expectations.	32,86%	46,58%
No, they rather did not meet my expectations.	2,64%	6,68%
No, the classes did not meet my expectations.	0%	0,62%
No opinion.	2,33%	4,63%

Source: Author's own study. *The data were collected in six centers in the summer semester and in seven centers the winter semester.

dents' parents: in 2017 more the ninety percent (91.75%) of them confirmed that thanks to the activities of the FPAKE universities, their children's financial awareness has increased. The lectures prepared for parents met the expectations of almost 90% of the respondents.

The high level of EUD/AME classes is appreciated not only by students and their parents but also by external institutions. For years, each of the successive editions of both programs are organized under the honorary auspices of the Minister of National Education. Until 2016, the strategic partner of the Children's University of Economics project was the National Bank of Poland, and in the academic year 2017/2018, this role was taken over by the Bank Zachodni WBK Foundation.

Also, the cooperation between the centers of EUD/AME affiliated at other universities proves that the adopted formula and the way of implementing activities of FPAKE can be successful. For many years the system of organizing classes according to the same program in every center, supervised and supported by FPAKE, is well evaluated by people associated with individual centers, and the cooperation runs smoothly.

Local coordinators of both projects are people employed at the universities where lectures are conducted. They have both the knowledge of economics and experience in working with children. Their duties include, among others, supervising the implementation of the curriculum and ensuring the appropriate staff as well as the classrooms for lecturers. In every individual center its coordinator is the person responsible for the smooth running of EUD/AME activities.

Such role is challenging, one must be prepared for unexpected burdens, but it also brings many benefits. Performing the duties of a local coordinator provides an opportunity to gain new educational and professional experience and to extend competence in the field of

educational project management. The involvement in the EUD/AME activities requires establishing new contacts in the local society (cooperation with schools, local media, business partners, contacts with students' parents) and positively impacts the position of the coordinator and his/her relations at the home university (Czerska, 2016, p. 33–34).

The presence of EUD/AME programs at higher education institutions affects universities as well, creating their positive image in the local environment, increasing competitiveness and enhancing cooperation with local community and business. The EUD/AME classes give an opportunity to engage university students in work with young learners, allowing them to broaden their skills and gain professional experience (Czerska, 2016, pp. 33–34).

The cooperation of local EUD/AME centers and FPAKE which started a couple of years ago, not only contributes to the success of both programs but also influences the increase in the prestige of the centers themselves. In autumn 2017, the EUD in Katowice, under the supervision of Urszula Maciąg, was honored with the Parent Award in the *Słoneczniki 2017* poll for the best educational project for children in Śląsk (the 'Logic' category). At the same time, the supervisor of the local EUD center in Wrocław – Iwona Czerska was awarded a special prize by the Rector of the Wrocław University of Economics.

Conclusions

The popularity of the idea of children's universities around the world and the constant interest in the activities they propose confirm the need for their further operations. The observation of many years of activities of the Children's University of Economics and the Academy of Young Economist leads to a conclusion that teaching

children from the age of 10 about the economic issues is crucial for them not only now but also for their future economic and financial decisions and actions.

Małgorzata Głogowska, a graduate of the EUD and AME, and currently a student at the Warsaw School of Economics (bachelor's degree studies in 'Quantitative Methods in Economics and Information Systems' and 'Management'; Master's Degree in 'Quantitative Methods in Economics and Information Systems') says: *I entered the Children's University of Economics in the sixth grade of primary school. (...) When it turned out that as a middle-school student, I could continue my adventure with economics within the framework of the Academy of Young Economist, I had no doubt about recruiting for this program. (...) The interest in economics and management, which was initiated at EUD and AME classes, in a natural way have led me to preparation and participation in the Entrepreneurship National Competition (Olimpiada Przedsiębiorczości). The choice of study became quite obvious for me as well. I chose the SGH Warsaw School of Economics as a university where I wanted to further develop my economic and managerial skills.*

Also Szymon Florek, the 8th grade student at W.S. Reymont Primary School No.1 in Otwock, a graduate of EUD and a participant of AME, reveals that participation in FPAKE programs may change his life plans: *I liked EUD because of the diversity of issues that are discussed – I understood that economics does not mean just tedious calculations, but also marketing, PR, team management, innovative start-up plans and much more! I use the knowledge gained during the classes in everyday life (...). After EUD, it was time for classes for older students at the Academy of Young Economist. It was also then that I began to consider for the first time whether or not to link my future with economics ... The prospect is tempting, and I, as an eighth grader, face a serious dilemma now.*

Abstract

Dynamic changes taking place in the contemporary world, which may be observed in the economy, politics and in the way the society functions, create many challenges to people in every aspect of their lives. One of the main tasks of today's education is to help young people to obtain the skills necessary for lifelong learning, which will enable them to flexibly adapt to the ever-changing reality and consciously manage their own education, also after leaving school. Therefore, awakening students' curiosity about the world around them and convincing young people that learning can be a pleasure and passion becomes the main goal of children's universities. Such initiatives have been acting around the world and also in Poland for many years.

The economic education programs aimed at primary school students offered by the Children's University of Economics (EUD) and the Academy of Young Economist (AME) distinguish them within the rich offer of Polish children's universities. Their primary goal is to popularize knowledge and build economic awareness among children, to promote entrepreneurial attitudes and to support parents in the appropriate economic education of the young generation. The EUD and AME offerings of extracurricular activities may also contribute to the growth of economic awareness among Poles.

The high level of satisfaction of EUD and AME lecturers, as well as the unceasing interest in these activities among children, prove these projects to be a success.

Key words: Children's University of Economics; Academy of Young Economist; extracurricular activities; economics for children; entrepreneurial attitudes; lectures for children

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Young people's progression into digital creativity. Comparison of research findings from the UK and Poland

Aleksander Schejbal*
Ben McManus**

Education Centre EST from Wadowice (Poland) and Wavemaker from Stoke-on-Trent (the UK) carried out an Erasmus+ project in the field of Youth aimed at building a makerspace for young people – MakeApp Club¹ – in order to foster their digital creativity in a social learning environment.

The project was inspired by the research conducted in the UK by Julian Sefton-Green and Lucy Brown for Nominet Trust with the findings presented in the report Mapping Learner Progression into Digital Creativity². They have investigated the issue how young people learn and develop as digital makers with a view to fostering more effective support. The main conclusions of the research are the following:

- Self-teaching (autodidacticism) of digital skills is very important as a personal discipline required in a changeable labor market.
- Young people who had successfully built digital careers were able to give their areas of interest a clear form and purpose, forging links with tech communities and relating their own learning to employment opportunities.
- Possessing a technical expertise in a chosen area of digital creativity is not enough – progressing in gaining digital expertise must be allied with other forms of progression.
- Access to mentors significantly increases the likelihood that a young person would progress in the fields represented by mentors.
- Attending extra-curricular initiatives and learning how interest in digital tech might relate to the labor market is essential in building a career identity.
- Young people needed at least one 'support system' (e.g. family, school teachers, mentors in extra-curricular establishments) in order to progress.
- School is not enough to prepare young people to be successful digital makers. More efforts should be made to create stronger and more

integrated links between school and non-school digital making activities.

- There is the need to move beyond a narrow view of technical skill progression and create a diverse range of learning experience that also encompasses participation in social networks, access to competent teachers and mentors and engaged learning activities.

These conclusions presented in the British report raise a number of questions for a much broader context than the UK. After all, the above issues are valid everywhere where fostering digital creativity becomes a priority in a modern economy driven by technology. Accordingly, it was interesting to conduct a similar survey in Poland based on interviews with young people who had been successful in the field of IT. Success in this context primarily means getting a satisfying job in the IT industry, which in the case of Polish respondents happened relatively early, even before graduation. An interesting and well-paid job, opening further prospects for professional career at the age of 20–22 years old is a significant achievement, encouraging a closer examination of the paths that make such a success possible.

The interviews with young digital makers in Poland were based on the biographical research methodology used in the UK. Nevertheless, the scope of the Polish survey was smaller – 20 interviews with young people studying IT and/or working in the IT field were conducted while the British report was based on 40 interviews with young people at the threshold of their career. The most informative interviews were then summarized in the form of biographical 'maps' to outline the pathways the young people had taken into the field of digital creativity. The main categories in which their progression was 'mapped' are the following:

- people that influenced their development,
- places where the young people engaged in digital creativity,
- areas of interest and future.

* Education Centre EST

** Wavemaker

¹ <https://makeapp.club/>

² <https://socialtechtrust.org/wp-content/uploads/2017/11/Mapping-learner-progression-into-digital-creativity-FINAL.pdf>

Young people's progression into digital creativity...

What follows is a brief outline of the findings from the Polish interviews in comparison to the findings formulated in the British report.

There is a clear convergence of the ways young Poles and Britons develop their creative digital skills. The first characteristic feature of the progression of people interviewed in the UK and Poland is their willingness and ability to explore technology on their own, developed relatively early, often whilst in the primary school. It seems that without this ability to devote a significant portion of free time to their own independent explorations, all the other factors influencing the development of digital creativity remain in the background. This fact should be taken into account when planning adequate forms of support for this group of young people in a way that may help them use the potential of digital areas of interest in their future careers.

A sharp thesis in the British report – ‘school is not enough’ – is also confirmed by interviews conducted in Poland. In the ongoing debate on the importance of digital literacy education at school, two threads should be distinguished. One thing is universal education, an important part of which is teaching all students digital skills, just as we expect them all to learn reading, writing and counting. Secondly, it is the education of ‘digital creatives’ – people who will be able to create digital tools themselves and, with their help, shape the reality. Young people with this potential quickly rise above the IT curriculum at school and in their free time undertake tasks requiring much higher competences than those that can be gained through computer science lessons. Even if school is initially an inspiration to make such an additional effort, it very soon ceases to be important in further development of digital skills of this narrow group of young people. The role of a good IT teacher in this situation is to go beyond the core curriculum and provide additional, non-standard and motivating tasks. Based on the interviews conducted in Poland, it is difficult to assess the scale of such a teacher's initiatives. It seems that they are scarce – only very few young people mentioned IT teachers among the influential people – those who were significant in the development of their digital competences.

However, the issue of the availability of mentors who could support young people in developing their competences beyond the IT curriculum at school is crucial. The difference between the results of the research carried out in the UK and Poland is significant in this case. In Britain there are many opportunities for engaging in digital making activities in out-of-school environments gathering enthusiasts of digital technology – makerspaces, Fablabs, hackspaces, to list a few of these opportunities (even if those opportunities are not equally available to all). These are not exclusive to young people who are beginning their adventure with coding, programming and designing, as they also invite experts with advanced knowledge and skills in these fields. That creates a space for cooperation, exchange of experience and learning, giving great

development opportunities for young people who participate in such hobbyist communities. None of the Polish respondents took part in this type of activities (the majority of them came from small towns in the Malopolska region). The only form of group activities developing digital skills which surfaced in the interviews were extracurricular IT clubs at school, mainly in the primary and middle schools, but very rarely in the high school. These workshops were run by the same teachers who taught computer science – this meant that the only group of mentors who appeared in interviews in Poland were teachers. Our respondents also mentioned older colleagues, family members, and people met in the internet, but these were all individual cases. We could not identify an organized group or a space giving access to mentors except for sporadic participation of some respondents in virtual social networks focusing on selected areas of digital technology.

The British report underlines the importance of involving young people in informal digital making activities as they open real career prospects. Work in the IT field is teamwork, so early gained experience in cooperation, for example in the creation of a computer game or a digital application is very important here. Makerspaces are social in nature, offering a space for meetups with peers and older colleagues who are already working in the IT industry, thus giving access to first-hand information about the realities in the labor market. It is very difficult to create such opportunities within the framework of formal education. Career counselling at school cannot substitute for authentic interactions in the expert circle of a makerspace in which a young person naturally gets to know the nature of the work that he or she is interested in, as well as trends and career perspectives.

In view of the above findings, we should revisit the issue of self-teaching creative digital skills for emerging careers in the IT field. There are no grounds to negate the declarations of the majority of Polish respondents who are convinced of the importance of their own independent endeavors on the path of professional development. However, a question arises how to support better learning conditions for young people, which would foster both independent creative mindsets and a social dimension that is so characteristic of work in the IT field. The commitment of IT teachers who can go beyond the core curriculum by organizing additional workshops for students is certainly very important. Still the key challenge is the creation of out-of-school establishments that give the opportunity to explore digital technology in an informal cooperation space in which both creative independent contributions of participants and the platform for sharing experience are equally valued and provide for the growth of competences essential for satisfactory work in the IT industry. In the UK the scale of availability of digital makerspaces is incomparably greater than in Poland where such initiatives are relatively new. While building a broad agreement on digital skills development in Poland, it

is worth considering the practicable implications of this state of affairs.

I was very pleased when Aleksander Schejbal got in touch with me to talk about extending the Nominet study in Poland. It is always productive to replicate even qualitative research of this kind and related findings. It is inspiring because alike the young people who galvanized early work in this area, being able to trace the roots of innovation, hard work, motivation and a genuine engagement with the excitement of an emerging academic field is the reason for hope. The sense of ingenuity by young people and the simple desire to create a meaningful pathway as they seek to engage with the world is always something to acknowledge and celebrate. However, both countries

clearly pay lip service to the idea of an entrepreneurial creative technology sector that is not backed up with networks of support, expertise or indeed the investment in the kind of infrastructure which we now know is necessary to make these opportunities available to all. If governments and education policy really want to invest in creative technology futures, putting simply their faith in the young people who are, for a variety of reasons, enabled to kick off this career, is not sufficient. We do seem to know about the mix of social and cultural institutions and practices that may give real opportunities to all young people. This research shows what might be needed to turn such findings into a good policy.

Julian Sefton-Green, professor of media education, Deakin University, Melbourne

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The results of the MakeApp Club project



Full texts of the British and Polish reports are available at:
<https://socialtechtrust.org/wp-content/uploads/2017/11/Mapping-learner-progression-into-digital-creativity-FINAL.pdf> (UK).



<https://makeapp.club/report/> (PL)



<https://makeapp.club/toolkit/>

Polish and English version available

Developing the child's multilingualism: the concept of concurrent foreign language learning at the Mały Poliglota Children's University¹



Agnieszka Szlachta

The aim of this article is to present theoretical and methodological assumptions that serve as the basis for the concept of concurrent foreign language learning at the children's university. The paper presents also a case study of the implementation of these assumptions at the Mały Poliglota Children's University² operating since 2012 at the Faculty of Philology of the University of Szczecin (Poland).

This publication constitutes a summary of six-year-long both conceptual and implementation works conducted by the author. It also includes information on the progress in current actions and plans concerning future editions of the project. The paper provides a well-organized collection of the author's views previously expressed i.a., at the First Congress of Children's Universities held in Warsaw in 2014 and during the public consultation at the Ministry of Science and Higher Education. It also includes some new concepts of and perspective for the early development of the child's and young people's multilingualism provided in academic education conditions. However, in the author's intent, the article does not constitute merely a collection of theoretical considerations but also indicates possibilities for practical application of specific concepts. It may prove to be of high interest to language teacher trainers, authors of foreign language teaching tools as well as philology students.

Introduction

The Mały Poliglota Children's University is the first university for the youngest individuals in the history of the University of Szczecin that has been continuously operating at the Faculty of Philology of the University of Szczecin since 2012. The Children's University was founded by Ewa Komorowska and Agnieszka Szlachta. The two scholars propose a model of education, the

innovativeness of which, among others, consists in the parallel learning of two foreign languages belonging to different groups of the Indo-European family. Moreover, the programme includes courses in the culture and history of the countries where those languages are spoken³. In total, there are already about 800 graduates from Szczecin, cities in the West Pomeranian Voivodeship and German border boroughs.

The work and experience gained at the Children's University have helped E. Komorowska and A. Szlachta to obtain two grants. In the academic year 2016/2017, the Mały Poliglota Children's University was one of the winning projects in the contest organized by the Ministry of Science and Higher Education called 'Uniwersytet Młodego Odkrywcy' (No 0013/UMO/2017/30, funding: 40 000 PLN)⁴. In the following academic year, the Mały Poliglota Children's University was one of the projects financed as part of the contest organized by the National Centre for Research and Development called 'Uniwersytet Młodego Odkrywcy' (No POWR.03.01.00-IP.08-00-UMO/17, funding: 485 000 PLN). Its aim is, among others, teaching two foreign languages to children, assuming gender equity and equal educational opportunities. The said project will last until 2020.

The concept of the Mały Poliglota Children's University was developed with due account of the latest research in the field of language education. Recently, the phenomenon of multilingualism has become increasingly important in considerations on the reality of the EU community. In particular, we refer here to the assumptions of the Common European Framework of Reference for Languages, a document put together by the Council of Europe.

* University of Szczecin

¹ The project is co-financed by the European Union as part of the European Social Fund, Action 3.1 Competences in higher education, Axis III: Higher education for economy and development POWER 2014–2020; project no. POWR.03.01.00-00-U032/17.

² For more detailed information on the project, please visit the website: www.malypoliglota.usz.edu.pl.

³ The program, including teaching communicative competence in two languages, is based on the monograph *Pragmatyka dyrektywnych aktów mowy w języku niemieckim, polskim i rosyjskim* co-authored by E. Komorowska (Komorowska, 2008).

⁴ The report concerning the implementation of the project including an extensive photographic documentation was issued as a printed publication: Komorowska, Szlachta, 2017.

Theoretical assumption on multilingualism

In reference to the current state of knowledge on language education, the author assumes that it is most beneficial to start second language learning at the age of about 6–8 years⁵. A child who commences learning his or her second language in early education period uses natural competences that allow him or her to attain functional bilingualism. The sooner a child starts learning a foreign language, the higher and more permanent skills he or she acquires. Magdalena Lisiecka-Czop among the benefits of early foreign language learning indicates, i.a., a better grasp of pronunciation and intonation of a given foreign language and acquisition of phonological patterns (which has a positive effect on learning subsequent languages in the future), positive attitude towards other languages and cultures, and improved general intellectual development of the child (Lisiecka-Czop, 2014, p. 45).

The author's experience proves that when the second language is taught without language immersion conditions, it cannot be called bilingualism as it does not stand for an equal knowledge of both foreign languages, it is rather 'incomplete' bilingualism. Therefore, it seems justified that not only bilingualism but also multilingualism should be supported (cf. Szpotowicz, 2011, pp. 131–134).

It is also worth to stress that the educational offer of the Mały Poliglota Children's University stems from social needs. Such expectations are visible in, among others, the increasingly growing number of inquiries sent by parents to the research unit the author represents (the Faculty of Philology, the University of Szczecin). People ask about the foreign language teaching offer for children aged five years and more. It results partly from the belief that academic⁶ teaching is more 'professional' than the services offered on the market. To some extent also from significant growth of parents' awareness of the usefulness of specific language skills as well as a highly favorable assessment of actions related to bi- and multilingualism and with learning about new cultures⁷. The background for such thinking could be a shift observed currently in global politics (from assimilation to multiculturalism) and perceiving multilingualism as a commonly accepted standard⁸:

Over the last decades, exchange in the field of economy, technology, science, education, art and entertainment (both real and virtual) and mobility of societies (development of tourism, migrations) have intensified, triggering a growing process of international integration. The sine qua non for this integration is the capacity to communicate, which for the vast majority of people implies the necessity of using fluently languages other than their mother tongue. (...) Perhaps, only a few years ago multilingualism was considered a non-standard phenomenon, yet today, it is monolingualism that is perceived as an atypical phenomenon on a worldwide scale. (Chlopek, 2011, p. 23). In a 2012 study, as much as 72% of residents of Europe responded that a citizen of the European Union should know more than one foreign language. Among Poles, this rate was even higher and was estimated to stand at 80% (Tutka, 2014, p. 213).

In accordance with the new Polish core curriculum introduced for 2017/2018, at the initial stages of education (primary school grades 1–6) learning one foreign language is compulsory. In turn, grade 7 students and onward learn two foreign languages, and it has been marked in the document that *one of the two compulsory languages might be taught in a higher number of hours, especially in bilingual schools or classes*⁹. The core curriculum also states that (...) *every student should have the right to continue to learn the same foreign language (s)he has chosen as the main language, at all the stages of education from year one at the primary school to the final year of the secondary school (throughout 12 or 13 years)*¹⁰. A secondary-school student can choose, however, another language than those he or she used to learn and can start learning it from the very beginning.

Thus, at the end of the third stage of education the language skills of an individual should correspond to the following levels described in the Common European Framework of Reference for Languages:

- the first foreign language – level B1+/B2+ (depending on the type of education: basic level/advanced level) to C1 level for those who attended bilingual classes or bilingual schools;
- the second foreign language – level A2+/B1+;
- the second and the third foreign language – level A1+/A2+.

Referring to the early Polish papers which have been written nearly 30 years ago concerning the bilingual

⁵ Recommendations of the Council of Europe on early foreign language teaching cover, i.a., allowing access to learning of one foreign language to children from the age of 8 years (Sopata, 2008, p. 317).

⁶ Teaching is provided by foreign language instructors who deliver classes for philology students on a daily basis. The classes take place in teaching rooms at a higher education institution.

⁷ Here, it is also worth mentioning the growing expectations of parents with regard to the teaching process and the foreign language teacher, since (...) *the pupil's learning is expected to be easy, pleasant and effective. In other words, the teacher is expected to teach using techniques that ensure the comfort of fast acquisition of the material and long-lasting memorization while allowing this knowledge to be instantly put into practice, and all this with the least effort on the part of the learner* (Marcinkowska-Bachlińska, 2017, p. 26).

⁸ An interesting study on the attitude of Poles towards multilingualism is the following title: Przyklenk, J., 2014, pp. 231–250. One of the examples provided by the author is the initially negative connotations of adjectives *dwujęzyczny* (bilingual), *wielojęzyczny* (multilingual), *różnojęzyczny* (plurilingual), which were connected to what is alien to human nature. Moreover, these terms were ascribed a metaphoric meaning of *obłudny* (deceitful), *falszywy* (false), *nieszczery* (insincere). (Ibidem, p. 234).

⁹ <https://men.gov.pl/wp-content/uploads/2016/11/podstawa-programowa-%E2%80%93-jezyk-obcy.pdf>

¹⁰ Ibidem.

approach to foreign language learning (Kaczmarek, 1988), one can find the basic assumption of the new (at that time) approach to foreign language teaching. Such an approach that has been successfully used in many countries points, among others, to the significance of the rules of inter-lingual transfer of grammatical structures and semantic as well as pragmatic translations. In that case, however, the direction of the transmission was from a mother tongue to the foreign language. It should be noted though, that initially, researchers had a negative approach to bilingualism, indicating, its negative impact on an individual's psyche. It was not until the 1960s that a specific breakthrough occurred (Nott-Bower, 2014, p. 59). In turn, modern research indicates numerous advantages that come with early foreign language learning.

The concept of concurrent foreign language learning

In the method adopted at the Mały Poliglota Children's University, the second foreign language that is introduced belongs to a different language group (with a significant typological distance), allowing participants of the project to notice significant semantic, grammatical and pragmatic differences¹¹. The emergence of inter-lingual influences should be considered obvious¹². In this case, much depends on the capacity to notice both similarities and differences between languages, which shall determine proper 'shift' of language codes. Concurrent learning of two foreign languages from diverse language groups will also allow one to eliminate (or at least limit) the interference of the subsequent language, which may have an effect on confusing the linguistic content transferred as part of the language education process. Here, it should

be noted that with every new language one starts to learn, more and more complex correlations and new types of impact emerge. They are presented in the form of a diagram by Zofia Chłopek in her paper on multilingualism (Figure 1.).

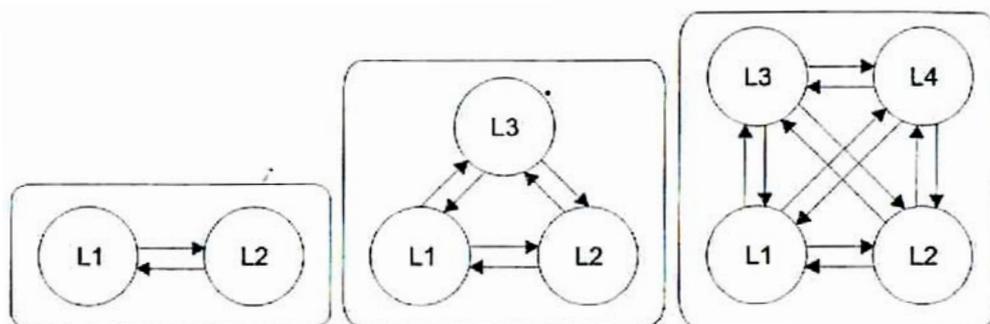
Nonetheless, bearing in mind that each type of communication in a foreign language is largely based also on comparing specific cultural systems (Kukowicz-Żarska, 2011, p. 39), foreign language teaching at the Mały Poliglota Children's University is also conducted with due account of historical and cultural aspects of the selected linguistic areas.

The main idea of the project's creators is to promote and develop bi- and multilingualism of children and young people aged 6 to 16 years in West Pomerania region. The initiative gives the young learners an opportunity to participate in regular, highly effective, professional language classes organized by the university and conducted by qualified foreign language instructors – academic teachers. The curricula for the classes have been prepared in a way that they allow combining the concurrent foreign language teaching with activities oriented on the cultural and general development of the young learners with due account of the specificity of the West Pomeranian region.

The Mały Poliglota Children's University project involves improving foreign language skills, that are crucial for the development of the economy and labor market of West Pomerania as well as aims to shape proper social attitudes based on the values such as tolerance, respect, openness. In particular, the Mały Poliglota Children's University project pursues the following objectives:

1. to spark cognitive curiosity and encourage obtaining knowledge, to stimulate intellectual and social development of the young generation;

Figure 1. Inter-lingual impact in the mind of a bi-/tri-/quadrilingual person. L1, L2, L3, L4 – subsequent languages



Source: Chłopek, 2011, p. 140.

¹¹ The inadequacy of specific structures in selected languages (Polish, Russian and German) was depicted with more depth by, i.a., E. Komorowska (Komorowska, 2008, pp. 40–53).

¹² Their occurrence may be justified by the fact that (...) *language systems of a bi-/multilingual person are stored in the same cerebral structures of procedural memory and declarative memory, and are linked to one system of conceptual representations. When the target language is used, elements or features of the non-target language (non-target languages) are activated, the effects of which can be observed during production and reception in the target language both in verbal and non-verbal actions* (Chłopek, 2011, p. 139). The author lists numerous phenomena that stem from the mutual impact of foreign languages: erroneous loanwords, semantic broadening, errors caused by the use of the so-called false friends, loan translations or transfer on various linguistic planes (Ibidem, pp. 148–150).

2. to teach two foreign languages concurrently using modern methods and to promote cultural and historical knowledge regarding specific countries, to promote openness to new cultures and respect for diversity;
3. to inspire creative thinking, to perfect concentration and memorization skills, to gradually implement individual mode of work;
4. to integrate the local community with the academic institution by creating conditions for conducting organized non-school educational activities;
5. to equalize educational opportunities in various social groups and age groups, and among people with disabilities;
6. to encourage the growth of the university regarding the fulfillment of the third mission by establishing cooperation with the environment, the commitment to the social development process;
7. to promote the idea of lifelong learning, children's participation in the life of academic community as the first step in the world of knowledge and science;
8. to promote awareness about the European Union, specific member states, West Pomerania and the University of Szczecin.

These objectives remain closely related to the implementation of the language policy of the European Union, which aims to promote bi- and multilingualism. Specific objectives of the learning process that entail both knowledge and skills take into account the specificity of a given group and are evaluated and verified in the course of the teaching process based on feedback received.

It should be also noted that competences acquired by the project participants will undoubtedly be only partial competences and the organizers do not face the pupils with a model of measurable achievements they should have upon completing the curriculum. The aim of the education system adopted by Mały Poliglota is primarily to acquire communication skills. Here, one can refer to the statement that, *the specific fragmentation (...) of the linguistic competence stems from the functional aspect present at the level of learning goals* (Zajac, 2011, p. 28). Narrowing down curricula and adjusting them to the level and needs of the project participants may be referred to as specialization. Shaping cultural competences is also significant, as they will allow foreign language users to communicate

not only correctly but also in a manner specific for a given community.

In the author's opinion, fulfilment of this objective is to a great extent influenced by integration workshops held during the trips to Germany. The possibility to organize international exchange is ensured under cooperation agreements concluded between the Faculty of Philology of the University of Szczecin and border institutions and schools¹³. The trips allow both cooperating units to fulfil common objectives. In principle, it is assumed that an intercultural competence is largely independent of the taught language, yet it still requires to be structured to some extent in specific curricula.

Choosing foreign languages to be taught

One of the author's key tasks is to determine the rank of and the demand for specific languages taught in a specific country and region¹⁴. Szczecin is a city in Poland located on the linguistic and cultural border, only several kilometers away from Germany, which also maintains ongoing contact with Scandinavia and considers international cooperation to be one of its strategic objectives. Apart from social needs specified as described above, one should also mention individual needs (e.g., contacts maintained by family members with representatives of other nations, international marriages, migration). Assuming that the Polish curriculum of foreign language teaching meets social needs to some extent, we cannot expect it to fulfill individual needs in this regard as well.

At present, the educational offer of the Mały Poliglota Children's University involves six foreign languages, three of which are taught as the leading languages in the language group (English, German and Norwegian) whereas the other three are introduced as additional languages in the language group (Russian, Spanish, Italian). In each group, two foreign languages are taught concurrently. Importantly, the number of hours of the leading language classes is twice as high as the number of hours of the additional language classes. The following groups based on the pairs of languages have been created:

- a group with English and Russian,
- a group with German and Spanish,
- a group with Norwegian and Italian.

Educational profiles remain compliant with the current European language policy guidelines regarding foreign languages since the author fully agrees with

¹³ The author undertook international cooperation with Oder-Welse Office, Gutshof 1, 16278 Pinnow (Germany). The cooperation involved a children's trip to Pinnow and participation in intercultural classes as well as participation of the personnel of the Mały Poliglota Children's University in public consultations on the development of Polish-German course books for children.

¹⁴ To this end, one can refer to the concept of the communicative value of language (*wartość komunikacyjna języka*) introduced by Waldemar Pfeiffer. The communicative value of a given language is said to be affected by relations between specific countries, the type and frequency of contact. Moreover, one can indicate the significance of historical, political and economic relations (cf. Pfeiffer, 2001, p. 207). This can be explained by the assumption that *The progressive integration and the related disappearance of borders and extensive daily cooperation increase the communicative value of one's neighbor* (Ibidem, p. 208).

Developing the child's multilingualism...

the statement (which applies to date) that *the integrating multilingual Europe needs solutions that ensure effective communication* (Pfeiffer, 2001, p. 204). For the author, the most significant are, however, studies dedicated to the specificity of foreign language teaching in West Pomerania with a particular focus on teaching children and young people. E. Komorowska, a researcher from Szczecin, notes that (...) *the youngest generation that enters the world has much more improved linguistic skills than the former generation, which is the effect of Poland's openness to Europe and related linguistic education possibilities* (Komorowska, 2006, pp. 343–344). When analyzing the grounds for introducing specific languages to the educational offer of preschools and schools in Szczecin, Komorowska claims that English – due to its international rank – should be considered obligatory¹⁵. In turn, due to the geographic location of Szczecin, she points to the necessity of an increased focus on German and rightly postulates that the educational offer should also be extended to include Scandinavian languages – Norwegian and Swedish.

To a large extent, the author also bases the choice of languages included in the offer of the Mały Poliglota Children's University on current reports regarding linguistic competences both with regard to the demand in a given investigated region and the current supply. For instance, when developing the educational offer for the academic year 2018/2019, she took a due consideration of the data from the report of Szczecin City Hall titled *Kompetencje językowe Szczecina* (Linguistic Competences of Szczecin) (Szczecin 2017) she co-authored¹⁶. Considering the above-mentioned findings, at present, the leading languages at the Mały Poliglota Children's University are English, German and Norwegian. The choice of the first one seems obvious given that English serves as the modern *lingua franca*. The other two foreign languages have been selected on the account of the geographical and social specificity of the West Pomeranian region and regional studies.

Additional foreign languages introduced to the offer of the Mały Poliglota Children's University are the result of the author's previous six-year-long experience and reflect the demand for non-school foreign language classes in Szczecin. Every year the enrolments for the Mały Poliglota Children's University show that Russian, Spanish and Italian are the most wanted foreign languages among the candidates¹⁷.

Responding to such needs allows classifying the approach taken by the organizers of Mały Poliglota as actions aiming to shape multilingualism¹⁸ in line with the stance promoted in the European Union's directives. Here, mainly due to the limited timeframe of non-school education in the curriculum of the children's university, instead of attempting to perfect the knowledge of one language, the pursued objective of the classes is to help the learners to obtain the communicative skills in two or more foreign languages.

The educational offer prepared in the project fills a significant gap in multilingual teaching of children residing in the West Pomeranian Voivodeship. The author also puts a great emphasis on showing the positive diversity of specific countries, regions, and most of all, people of different nationalities. The fundamental objective is hence not only to teach a foreign language but also to raise among the region inhabitants the awareness regarding the culture of one's own country and foreign culture from an early age.

Organizing language classes and teaching methods

Owing to the financial aid obtained from the European fund, classes provided as part of the project are free of charge. Enrolment is conducted in line with the principles of equality and equal opportunity policy. The project will be carried out with the same number of male and female participants and the equal number of individuals living in urban and rural areas. Out of the total number of places 2% are reserved for the disabled, and children from disadvantaged families are accepted out of turn. The project does not include any additional enrolment requirements (such as knowledge of specific foreign languages). The enrolment limit for the academic year 2018/2019 was 180 participants. The students of the Mały Poliglota Children's University are children and young people aged 6 to 16 years. Classes take place in small groups created concerning both the age and the level of knowledge of specified foreign languages. The groups have up to 15 students each to ensure efficient work during the classes and monitoring of each pupil's learning outcomes.

Individualization of the teaching process is one of the vital issues for the organizers. Here, the fact that participants belong to groups created both regarding

¹⁵ However, Komorowska notes that the general level of knowledge of foreign languages in the Polish society cannot be considered satisfactory, which is a significant obstacle for adult Poles who are experts in specific fields, e.g. when participating in international business operations, during the business trips or when taking supervisory posts abroad (cf. Komorowska, 2006, p. 343).

¹⁶ The report is available online: www.invest.szczecin.eu/download/file/fid/322.

¹⁷ At the time of enrolment, we also suggested the following languages: French, Chinese, Japanese, Czech. The inhabitants of the region proved to be less interested in these languages, still, pilot groups were launched. We plan to extend our educational offer to include other languages.

¹⁸ Here, one can refer to the concept of the so-called model of receptive multilingualism proposed by the Modern Language Society in Germany in the 1990s, according to which communication takes place largely based on the mother tongue, with the assumption that several other languages may be comprehended. Though it may be plausible, such an approach seems insufficient to the Author (cf. Pfeiffer, 2001, p. 205).

the age and their familiarity with foreign languages is essential. Determining age brackets is crucial. The said ranges usually take the following form:

- group 1: participants aged 6 to 7 years¹⁹;
- group 2: participants aged 8 to 10 years;
- group 3: participants aged 11 to 13 years;
- group 4: participants aged 14 to 16 years.

As part of the project, three tests will take place; language skills test for assessing the level of already possessed knowledge (before the commencement of the project), the knowledge test in the course of the classes (two tests per one academic year) and the final assessment of knowledge (after project completion). The authors of the tests are academic teachers, employees of the Faculty of Philology of the University of Szczecin, who also carry them out and check the results. The teaching efficiency evaluation system will include statistical analysis and reports prepared after each stage of the project implementation (results of a study of competences). All these data will be available to the public after completion of the project.

Classes conducted as part of the project implemented by the Mały Poliglota Children's University have a form of foreign language courses, history and culture classes and educational language workshops. During language classes, the so-called communicative approach is adopted supplemented by intercultural objectives²⁰. The objective is hence to develop language competences that one needs to establish social contact adequate for a given communicative situation. The applied *teaching methods and measures should allow the communication between the sender and the receiver, which despite taking place in staged conditions should resemble natural conversation referring to authentic situations and stemming from current communicative needs* (Kukowicz-Żarska, 2011, p. 38). The author inclines to adopt the so-called natural approach to foreign language teaching according to which *a grammar competence is developed while using the language for communication; it cannot be attained solely by learning grammatical rules* (Pfeiffer, 2001, p. 88).

In practice, the author understands these assumptions as the necessity of creating by foreign language instructors the conditions similar to those of natural communicative situations. That implies the high importance of using visual aids and props, which gives the project participants the possibility to engage in creative actions and react spontaneously. Such an ap-

proach leads to forming an actual difference in information levels between the interlocutors (Komorowska, 2004, p. 27), and not solely to the construction of grammatically correct utterances.

It should be stressed that the style of working in each group is determined by the age and level of linguistic and communicative competences of the project participants²¹. Due to significant differences (such as writing and reading skills), the groups are to a considerable extent run by language instructors in an individual manner. The children who have hardly acquired writing and reading skills learn mostly by listening (e.g., to songs, rhymes) and by using their natural mimicking skills also attain objectives related to speaking skills. Enrichment of vocabulary and learning new simple sentence structures constitutes the fundamental aim in the youngest groups of the project participants. Here, multiple repetitions are necessary to facilitate consolidation of the language material. The choice of the forms and meanings taught, must correspond to the children's knowledge resulting from concrete thinking specific for that age (introduction of names of objects, people, indicating elements of the surroundings, creating situations natural for the child, etc.). Also, due to the need for physical activity that manifests primarily while playing, various forms of expression need to be introduced. The possibilities of diversifying the teaching methods increase while working with teenagers – here, the fundamental task is still to ensure effective communication in typical situations, yet with due account of reading and writing texts. There is a greater focus on the grammatical form of a given utterance, while the content may involve abstract thinking capacity of learners at this age. However, the language instructor faces new challenges: students are reluctant to fulfill school duties, peer pressure starts making an impact on them, and they manifest the need of being noticed (more on this issue: Komorowska, 2004, pp. 32–35). Here, the approach adopted by the foreign language instructor becomes crucial, as he or she should take actions to ensure proper ambiance that will make the learning process free from fear.

The Mały Poliglota Children's University has its own highly-qualified teaching staff who conduct classes in line with original curricula using cutting-edge foreign language teaching methods. The staff comprises experts in foreign language teaching – academic teachers, employees of the Faculty of

¹⁹ The main criterion for determining the first group with the smallest age bracket is the assumption that the children admitted to this group are acquiring only living language skills and have not developed reading or writing skills yet (cf. Komorowska, 2004, p. 32).

²⁰ In the studies, the following terms can be found: *postkomunikacyjna faza dydaktyki języków obcych* (the post-communicative stage of foreign language teaching) (cf. Pfeiffer, 2001, p. 77), *post-metodyczna dydaktyka języków obcych* (the post-methodological foreign language teaching) (Jodłowiec, Niżegorodcew, 2008, p. 15). The approach we represent may be also classified into the group of the so-called indirect methods.

²¹ These competences involve in particular: *perfecting speech perception, acquiring grammatical rules, perfecting language production, comprehending utterances and pragmatics, i.e. using language for various purposes in social situations* (Trempała, 2011, p. 215).

Developing the child's multilingualism...

Philology of the University in Szczecin. The criteria for choosing foreign language instructors to run classes as part of the project involve in particular: education in Philology in a given foreign language and experience in working with children and adolescents (2 years as a minimum). It is required that individuals who conduct foreign language courses are also familiar with the second foreign language taught concurrently in a given group. The subject of classes and the level of difficulty are adjusted to the learner's age, while the language used by the teacher ensures that the young students understand the information provided.

Each course cycle starts with an official inauguration with the presence of the authorities of the University of Szczecin and its Faculty of Philology. During the meeting, young students receive specially prepared student's logbooks and starter kits (t-shirts, notebooks, and ball pens, bags or backpacks, identity cards).

For the academic year 2018/2019, as many as 22 four-hour meetings are foreseen. Each young student will hence participate in 88 teaching hours. The classes take place only on Saturdays from 10:00 a.m. to 2:00 p.m. in line with an established timetable.

Each meeting has a fixed structure: two teaching hours of the leading language (English, German, Norwegian), one teaching hour of the additional language (Russian, Spanish, Italian), one hour of history and culture classes or language workshops. The historical and cultural parts of the classes pertain to history, geography, social studies, and the culture of the area where the language being taught is spoken. The educational language workshops involve classes that will allow linguistic and cultural competences to be put to practical use. These will be integrated and multi-disciplinary. The last of the indicated forms of education entails the introduction of knowledge on specific linguistic areas, while formerly acquired language skills are practiced (by role play, making visual artworks, etc.). Hence, it is assumed that the project participant, as a result, will acquire linguistic competences, and not only learn the specific foreign languages²².

In previous years, each semester ended with a trip to a cultural institution (a theatre, a museum or a cinema) or an editorial office (be it the press, radio or TV) in Szczecin, or an interesting natural site in West Pomerania. In subsequent years our little students had the opportunity to visit the philharmonic hall in Szczecin, to meet the editorial staff of Radio Szczecin, to take a look behind the curtains of Pleciuga Puppetry or to see the National Museum exhibition. Among the other attractions offered to them was the visit to Eureka center of interactive experiments, the display at Zajezdnia Sztuki of the Museum of

Technology and Communication or participation in an expedition being part of the project called 'Droga do lasu – zachodniopomorskie' (A Path into the Forest: West Pomerania).

Starting from the academic year 2017/2018, trips to Germany are organized to allow participation in intercultural integration meetings. The destination venues are schools in Germany in border areas, which concluded cooperation agreements with the Faculty of Philology at the University of Szczecin. Another trip will take place at the end of the current edition of the project. As part of the meeting, Polish and German children will take part together in integration teaching classes that will broaden their linguistic and cultural knowledge.

According to the author, the international cooperation with border schools and institutions allows practical usage of linguistic and cultural skills acquired by the project participants for communicating with their peers. It may also be conducive to overcoming the anxiety of talking in a foreign language.

Presentation of the achievements in linguistic and cultural education of children from specific groups (verbal-musical performances in foreign languages, an exhibition of visual artworks) constitutes the summary of the project. The theatre actors and visual artists invited to cooperate within the project will provide the necessary support for young students while working on the presentations and performances.

Outcomes of classes and additional actions

A permanent outcome of the project is enhanced linguistic competences in two selected foreign languages as well as improved social and cultural competences of children and teenagers. The participation in the project supports also identifying individual skills and talents, which in turn may help the young people to choose the educational profile in subsequent stages of education. The young students also have the one-of-a-kind opportunity to meet an academic environment.

The project participants who have completed education in one language group can enroll in the next academic year to another language group. Thus, by completing the full three-year curriculum at the Mały Poliglota Children's University, children and adolescents have the opportunity to learn or develop the command of three foreign languages at an intermediate level (English, German, Norwegian) and additionally, they can learn the other three foreign languages at a basic level (Russian, Spanish, Italian). This offer makes the Mały Poliglota Children's University stand out not only in the children's language class market in Szczecin but also in Poland.

²² The familiarity with a foreign language is identified with acquisition of its vocabulary and grammar. Linguistic competences are considered in a much broader context and cover particularly lexical, semantic, grammatical, orthoepic, phonological and orthographical skills. The difference between the acquisition of linguistic competences and the familiarity with foreign languages is discussed in more depth in, among others (Zajac, 2011, pp. 22–24).

Starting from the academic year 2014/2015 – concurrently with the classes for the participants of the project implemented by the Mały Poliglota Children's University – there are language courses organized for parents/guardians of the little students. Each year, we accept about 100 adult participants. The classes take place at the same time and in the same location as the classes for children. The university's offering includes the following foreign languages: English, German, Spanish, Italian, French, Russian at different proficiency levels. These actions are compliant with the idea of lifelong learning. Additionally, starting from the academic year 2018/2019, free classes in the form of workshops for parents are organized to promote the development of parenting and social skills that cover knowledge in the field of pedagogy, psychology, and teaching methods.

Conclusions

Referring once again to the findings of contemporary researchers, *it can be foreseen with a sufficient degree of probability that teaching third and subsequent languages and multilingualism will become a global phenomenon in the near future, and a polyglot will become a global norm, and not only monolingual individuals but also bilingual ones will be a minority* (Chłopek, 2011, p. 26). For that very reason, there are at present works conducted with the aim to broaden the offer of foreign languages taught concurrently at the Mały Poliglota Children's University. In the previous years, pilot language groups including Chinese and Japanese were formed. The methods applied in our project have proven successful also in the case of teaching those languages. Additionally, we have offered single French and Czech classes. After evaluating the past achievements of the project participants, the authors of the project intend to expand the offer to include new groups with Chinese and Czech (with Chinese being the leading language) as well as with French and Japanese (French as a leading language). The language groups mentioned above are currently tested, and the learning achievements will be presented in subsequent studies.

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Abstract

The author of this paper provides a detailed discussion on the idea of teaching foreign languages to children and youth in the aspect of developing bi- and multilingualism. The main aim of this article is to present the concept of concurrent foreign language learning that has been pursued by the Mały Poliglota Children's University at the Faculty of Philology at the University of Szczecin (Poland) since 2012.

The article involves a description of the concept of the Mały Poliglota Children's University with due account of the latest research in the field of language education and guidelines of modern language policy (in the European Union and in Poland). The paper presents methodological solutions which have been applied and the obtained implementation results. Moreover, the author refers to the specificity of teaching in a unique region of Poland, namely, West Pomerania, a border area, and discusses local conditions that affect the suggested foreign language teaching offer.

The main idea of the creators of the Mały Poliglota Children's University is to promote and develop the child's and young people's multilingualism by allowing them to participate in regular professional language classes organized at a higher education institution, conducted by well-qualified language instructors – academic teachers, and implemented based on the original curricula. The project concept covers concurrent teaching of two foreign languages supported by cultural and general development activities. Educational offer of Mały Poliglota currently involves the following language groups: English and Russian, German and Spanish, and Norwegian and Italian. This offer not only makes the Mały Poliglota Children's University stand out in the market of language classes for the youngest in Szczecin but is also unique in Poland. The described principles are currently implemented as part of the Mały Poliglota Children's University project, co-financed by the European Union with the funds of the European Social Fund (project no. POWR.03.01.00-00-U032/17).

Key words: language education; foreign languages; linguistic competences; multilingualism; bilingualism; concurrent foreign language learning; children's university

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The meetings with the world of science and art – the activity of the University of Children and Parents at the Pedagogical University of Cracow

Barbara Kurowska*

Education – learning, teaching, and upbringing – is an inseparable part of individual and social life. It co-creates every form of human activity through learning (Kojcs, 2012, p. 22), (...) it is a total of intergenerational interactions exploited to formulate the entire life abilities of an individual (...). These actions make a human become a mature creature, consciously realizing his/her goals, 'settled' in a given culture. The person is therefore capable of constructive criticism and reflective affirmation, (...) not limited only to the transmission of messages (let alone knowledge that the learner is actively constructing, building), education should be treated as an interaction between the participants of the process of education (Milerski, Śliwerski, 2000, p. 55). It is conducted not only in educational centers but more and more often in extracurricular institutions, the activities of which support children in developing their interests, cognitive curiosity, creativity as well as in broadening their horizons. These institutions already introduce the youngest children into the secrets of knowledge, the world of science, shape their fascination with the world around them and strengthen their natural need to explore the world. These are certainly children's universities, enjoying increasing popularity in Europe and around the world.

Introduction

The first university for children was created in the German city Tübingen in 2002, and it gained recognition among children and their caregivers from the very beginning. Children listened with great interest to lectures on the secrets of the world of science, conducted by university professors (Warchała, 2016). The initiative started in Germany was also undertaken by other countries, including Poland, where children's universities have been established since 2007, operating as extra-curricular forms of education, the basis of which were often created by universities (Łapot-Dzierwa, Szarota, 2017). The first universities were founded in Cracow, Warsaw, Poznan, and Lodz.

The University of Children and Parents – the goals and principles of the activity

The University of Children and Parents (pol. UDiR) operating at the Pedagogical University of Cracow was established in order to disseminate knowledge in various fields of science, culture, art and technology among children aged 6 to 12 and to conduct broadly understood parental education. The first promotional meeting took place in April 2011 and regular classes with its students began in October of the same year. The first dean of the university was Professor Danuta Waloszek, the next one, since 2013, Professor Kinga Łapot-Dzierwa.

UDiR is a university-wide entity operating within the university's structure. The Programme Council supervises its substantive principles and organization of activities for children whereas the dean supervises the on-going tasks. The Pedagogical University's academics conduct the meetings for children and their parents at UDiR. The offering includes mainly the classes, workshops, and lectures, tailored to the needs and capabilities of the students. Volunteers recruited among the students of pedagogical faculties are also involved. All educational activities undertaken at UDiR are focused on the development of general public knowledge about upbringing, which requires continual extension and updating, and which in consequence may lead to the rise in the general level of culture in intergenerational relations (Łapot-Dzierwa, Szarota, 2017, pp. 73–74).

The learning processes shape every person and every society, especially the knowledge-based society. Therefore, the task of all its members and institutions should be to implement the idea of lifelong-learning (Kojcs, 2012, p. 27). Education is the key to transforming today's society into the knowledge society (Zemło, 2008, p. 61). The activity of the University of Children and Parents goes very clearly in line with the pan-European idea of the knowledge society. In accomplishing its tasks, the university aims to instill in young students

* Pedagogical University of Cracow

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a passion for learning, the desire to obtain knowledge and the ability to use it to pursue further educational tasks or to solve problems. In every action the university undertakes, it focuses on developing children's creativity, indispensable for functioning in today's world and for creating reality in one's chosen way. It also concentrates on propagating scientific and cultural thought, giving inspiration for creative thinking and acting, familiarizing with the academic environment, but above all on social integration through the involvement of the following groups: an academic teacher – a child – a parent – a grandparent – a volunteer/student (Łapot-Dzierwa, Szarota, 2017, p. 77).

Since 2015 the meetings at the University of Children and Parents takes place twice a month and are delivered in two age groups (younger children: aged 4–7 and older children: aged 8–12). Previously, the classes were conducted with all children simultaneously.

While the youngest participate in the classes, their parents and caregivers can take part in lectures specially designed for them. The topics of the talks are prepared following the participants' suggestions and proposals, collected at the beginning of each academic year. These are issues of both pedagogical and educational nature, in the scope of which parents express a desire to deepen their knowledge and meet a team of specialists, to supplement their frequently common knowledge with its scientific background.

The classes for children are always prepared by the didactic team. They aim at discovering and making the scientific thought comprehensible in the academic space. They are often delivered in specialized laboratories appropriate to the subject, which gives children an opportunity to familiarize with the specificity of scientific and technical work, as well as to acquire the basic concepts of the selected areas, fields and disciplines (Łapot-Dzierwa, Szarota, 2017). The children's high involvement in the given tasks shows that the chosen topics are exciting and inspiring for them. The classes are conducted by specialists in various fields: physicists, chemists, mathematicians, Polish language teachers, librarians, musicians, and artists. Each specialist tries to communicate the difficult scientific content in an accessible way and thus make the children involved in the discussed issues.

The content of the proposed classes with children and parents clearly shows that the creators of the University of Children and Parents and all persons involved in the work, *knowing the children's passion for learning about the world, take them on a trip around different subjects and topics and at the same time offer their parents a tour around various issues of upbringing* (Łapot-Dzierwa, Szarota, 2017, p. 77) and education to support their children with cognitive, social or emotional development.

The classes for children usually have a form of workshops and are organized in a very accessible way to trigger a spontaneous activity of the participants as much as possible. It is common knowledge that the youngest are much more willing to engage in activities that not only arouse their cognitive curiosity, relate to

their interests, are rich in a variety of stimuli but also encourage them to get involved. When the activities take the form of a play, they provide an opportunity to acquire knowledge independently and better experience the surrounding world.

In addition to regular classes, the students of the University of Children and Parents can also take advantage of additional sports activities organized specially for them (conducted by the staff of the Sports and Recreation Center) at the swimming pool and in the gym, as well as art and ceramics workshops. Children's works created during the workshops mentioned above are always presented at exhibitions in the main building of the Pedagogical University of Cracow.

The involvement of UDiR students in the 'Artists in the world of pedagogy' project

In 2017 and 2018 a group of 25 volunteering children from the University of Children and Parents participated in the project 'Artists in the world of pedagogy. The meetings in the field of art, art as a space for shaping cultural and artistic competences of children and youth – educational implications,' implemented by the Department of Artistic Education of the Pedagogical University of Cracow (in cooperation with the selected staff from the Institute of Pre-school and School Pedagogy of the Pedagogical University as well as some external stakeholders). The project is a part of the task No. 589/P-DUN/2017, financed by the Ministry of Science and Higher Education earmarked for science promoting activities.

One of the objectives of the project was to help children to build their cultural identity through their contact with tradition and pieces of art, assuming that this should be mostly carried out in educational establishments – both formal and informal. Indirect goals were the promotion and dissemination of activities of both staff and students of the Pedagogical University, and the University of Children and Parents. The project also proved the effectiveness of the 'Education through art' approach (developed by the staff of the Department of Artistic Education of the Pedagogical University of Cracow). The indicated concept assumes, among other things, that art *has extraordinary qualities, enhancing the recognition of the facts and events always in new and different arrangements and contexts. The recipient (in this case a child/a student) discovers new areas for himself/herself and gains knowledge about the surrounding world. In this way, each meeting with the art transforms into an effective and professional activity, leaving a lasting mark not only in the form of a product but in the processes of internal changes* (Łapot-Dzierwa, Małozowski, Baś, in print).

The project was also aimed at shaping children's sensitivity and respect for culture and art in general, referring to its continuity and tradition; using what the development of civilization brings, including technologies and new media. By combining tradition with the future, perceiving the phenomena of culture and art as a continuous process, open to the constant

search for values, it referred to basic human needs in a practical dimension.

The authors and the implementers of the project, through their actions, wanted to show that stimulation, animation and finally co-participation of a pedagogue-artist in the creative process of a child leads to the formation of the child's attitudes, which in itself has all the appearances of creation, and at the same time allows the pedagogue to improve his/her creative competence. What is particularly important in the cooperation between a child and an artist is the fact that the child can get support from the person with both the substantive and 'technical' experience as well as become aware of being involved in the creation process with all its consequences.

A vital part of the project was the Small Academy of Arts created for children from the University of Children and Parents. The artistic and educational initiatives carried out by the Academy were aimed, inter alia, at learning about the richness of Polish culture and art,

promoting children's creativity and popularizing the 'Education through art' concept. Kinga Łapot-Dzierwa, the professor of the Pedagogical University, an artist, a teacher, an educator, an employee of the Institute of Pre-school and School Pedagogy at the Pedagogical University of Cracow was the supervisor of the group.

The activities of the Academy were carried out regularly and had a form of the workshops, preceded by content presentations that formed the educational basis for these workshops. They were inspired by the works of eminent Polish artists and conducted by professionals dealing with painting, graphic design and new media.

Table 1. presents a list of the selected issues implemented within the framework of the Small Academy of Arts in the academic year 2017/2018.

Although the children who attended the workshops were of different ages (5–12 years), they worked together, integrated well and communicated with one another successfully. Frequently, the older children

Table 1. A list of the selected topics covered within the framework of the Small Academy of Arts in the academic year 2017/2018 and their key objectives

The subject of the class	Main goals
<p>1. <i>Painted with flowers</i> (pol. <i>Kwieciem malowane</i>) – the inspiration of Stanisław Wyspiański's painting and the folk painting of Zalipie</p>	<ul style="list-style-type: none"> – developing imagination and perception through observation of the natural environment and the surroundings (Polish flowers characteristic of the Malopolska region); – analyzing the selected works of art with particular emphasis on the specificity of Stanisław Wyspiański's work (Polish flowers) and the specificity of Zalipie painting; – making a piece of art work referring to the content discussed (a combined technique – painting with tissue paper, drawing with markers).
<p>2. <i>Beast or no beast</i> (pol. <i>Zwierz nie zwierz</i>) – the inspiration by Józef Wilkoń art and the texts of Polish legends</p>	<ul style="list-style-type: none"> – developing imagination through observation of the natural environment; – analyzing the selected works of art with particular emphasis on the characteristic features (fantasy and uniqueness, originality of the visual message) of the works of Józef Wilkoń; – analyzing the selected texts – Polish legends including animal elements (fantastic); – creating an artistic work that reflects the content described (a colorful scratch).
<p>3. <i>Autumn impressions</i> (pol. <i>Jesienne impresje</i>) – the inspiration by Jan Stanisławski's painting and the texts of Polish poets</p>	<ul style="list-style-type: none"> – developing perception and imagination through observation of the natural environment and the surroundings (autumn landscape); – analyzing the selected works of art with particular emphasis on the characteristic features of autumn landscape using the works of Jan Stanisławski; – analyzing the selected texts – poems by Polish poets in which one can find the descriptions of the autumn landscape; – making an art work about autumn (a combined art technique – painting with watercolors + drawing).
<p>4. <i>A house on a head</i> (pol. <i>Dom na głowie</i>) – the inspiration of Jacek Yerka's painting</p>	<ul style="list-style-type: none"> – developing imagination – unusual and untypical phenomena found in the natural and a child's environment; – analyzing the selected works of art with particular emphasis on the specificity of Jacek Yerka's creativity (<i>Two Snails</i>/pol. <i>Dwa ślimaki</i>, <i>Ace Tee</i>, <i>Express Shipping</i>/pol. <i>Przesyłka ekspresowa</i>) with particular emphasis on interesting and untypical artistic solutions, unreality and fantasy; – creating an art work referring to the discussed issues (a drawing collage).
<p>5. <i>Is the snow white?</i> – the inspiration of the works of Ferdynand Ruszczyc and Julian Falat, the texts of Polish poets and music</p>	<ul style="list-style-type: none"> – developing imagination by observing the natural environment, the immediate surrounding and changes occurring in nature; – analyzing the selected works of art with particular emphasis on the specificity of the works of Ferdynand Ruszczyc (<i>A Winter Fairytale</i>/pol. <i>Bajka zimowa</i>) and Julian Falat (<i>Snow</i>/pol. <i>Śnieg</i>, <i>A Winter Landscape</i>/pol. <i>Krajobraz zimowy</i>), including the issues related to the characteristics of the colors appearing in a winter landscape; – analyzing the selected excerpts of literary texts and music concerning the topic of the classes; – creating an art work referring to winter and landscape (flat paper technique – creating a picture from gray colored paper using a paper tearing method).

Source: Author's own study.

helped the younger ones, who therefore were motivated to work with double effort and commitment. The children's knowledge of the tackled topics and artworks presented during the classes is also worth noting. The experience was remarkable, and according to the participants' opinions, it has been obtained during the joint trips with parents to various galleries and museums. Even the works of the artists who were less known to children generated their great interest followed by the multitude of questions about the creators and their lives, children's attitude to the smallest details of the artworks, interest in color, composition and their subject matter. Creating their own pieces of art was a source of great joy for children, which in turn increased their commitment to work. Also, the artistic techniques which were previously unknown to them made the job even more attractive.

It must be stressed that all the workshops conducted as part of the Small Academy of Art triggered amazing creative expression and joy of creation in children. That resulted in great artistic works, that will constitute material for the catalog to be published at the end of the project.

The workshops for students of the Pedagogical University, whose role was to assist children during the creative classes were another vital part of the described project. That was an excellent occasion for the students to deepen their methodological knowledge and to design their educational activities. The acquired knowledge and skills could be used during several workshops with children from the Small Academy of Arts, in which they had an opportunity to take part looking at the work of children and participating in the creative process.

The authors intend to continue the project 'Artists in the world of pedagogy' in 2019, which will undoubtedly open up new opportunities for children from the University of Children and Parents. It would allow involving a higher number of children and students in the project activities and introducing them into the rich world of not only the Polish but also the world art and culture.

Abstract

The text presents the activity of the University of Children and Parents established by the Pedagogical University of Cracow. The primary aim of the study is to show examples of practices that can become an inspiration for other educational institutions of this type.

The first part of the article presents the main goals and principles of the university's activities and describes the types of meetings for children and their parents, as the means of broadly understood extra-curricular and parental education.

In the second part, the author of the paper presents the general idea of the project 'Artists in the world of pedagogy. The meetings in the field of art, art as a space for shaping cultural and artistic competences of children and youth – educational implications,' with particular emphasis on the Small Academy of Art, which was created as a part of the project. Students of the University of Children and Parents have an opportunity to participate in the Academy and learn about the richness of Polish culture and art and pursue their creative passions.

Key words: University of Children and Parents; extracurricular activities; workshops for children; lectures for parents; creativity; creation

Conclusions

The University of Children and Parents operating at the Pedagogical University of Cracow is very popular among children and their parents. It gives them an opportunity to spend their free time in an interesting and creative way. It introduces them to the world of science in an accessible way, adapted to the participants' needs and possibilities. It attempts to instill in young people the eagerness to learn, to explore the surrounding world and acquire knowledge independently. The UDiR also tries to contribute to intergenerational education, based on the dialogue, integration, mutual learning, and exchange of experiences. Additionally, in 2017 and 2018, the UDiR students had an opportunity to participate voluntarily in the Small Academy of Art, a part of the project 'Artists in the world of pedagogy.' It aims to promote the Polish artists' art and culture among young learners.

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The role of children's universities in developing key competences and universal skills of children and teenagers



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The digital revolution has created new patterns of behavior, ways of activity and thinking. It has radically changed the labor market as well. The information society is developing, which implies the necessity of preparing the mankind to living in a specific cyberculture, defined as the whole range of human activities related to the use of modern IT tools (Lévy, 2001, pp. 107–112). The most important task of education is to prepare young generations for rational and efficient functioning in the reality which is a synergy of the real and virtual world. The aim of the article is to show the role of children's universities in developing the skills recognized today as crucial, the possession of which will decide about the future of the whole generations. Particular attention was paid to the development of logical-mathematical intelligence and digital competence.

Cyberculture – contemporary educational challenges

The situation of permanent change, caused by the development of modern technologies, requires a contemporary human being to interpret and understand the new circumstances and to adapt to them all the time. Continuous self-improvement, reflection and the ability to be innovative are indispensable in this process. Such cognition of the world enables each active individual to build his or her own knowledge about the environment in which (s)he exists and works or learns. Every human being is subjected to changes while experiencing modernity what opens them to the future life in a new interpretative context. Building one's own system of knowledge is one of the key activities of a person, which should result from his or her general situation and previous experiences, combined with the individual personality features and attitudes. Such hermeneutical-phenomenological experience is a characteristic feature of present society, functioning in a digital, extremely dynamically evolving reality. It is an inseparable element of everyone's cognitive activity, regardless of age. Therefore, the ability to rationally use the opportunities created by informa-

tion and communication technologies in everyday life requires an understanding of cyberculture that creates a specific cognitive context. The development of skills necessary in a digitized future, necessary for the rational exploitation of the achievements of civilization, accompanied by the ability to avoid dangers is a challenge for contemporary societies.

Nowadays, it is assumed that the formation of digital competences and the development of logical-mathematical intelligence is necessary for functioning in a digitized world and determines the personal and professional success of the young generation. However, taking into account the systematically growing computerization of social life, one should ask whether the level of cyberculture of children and youth corresponds to that increase. At the same time, the autonomy and independence of young network users may facilitate their ability to cope with atypical situations and may support the development of creativity (Barney, 2008, p. 95).

Over the years, the concept of cyberculture has received many interpretations, such as, for example, culture 2.0, understood as a connection between technology and culture. Cyberculture was called by Manuel Castells (2008) the culture of 'real virtuality.' Due to the synergy of the virtual and the real world, cyberculture is perceived as a creative functioning in the new space of human life (Zawojski, 2008, pp. 21–30). Cyberculture is a combination of many technologies (material and intellectual), practices, attitudes, ways of thinking and values developed with the emergence of cyberspace (Lévy, 2001, p. 16).

When digitalization of life is more and more noticeable, the activity of the young generation in the digital environment is an extremely difficult challenge for all people who are responsible for preparing young people for future functioning. The way in which children and teenagers adapt to digital reality, its understanding, interpretation and exploitation in everyday reality depend on the process of upbringing. Therefore, the key task is to shape young people's skills of rational use and co-creation of the cyberculture.

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The development of logical and mathematical intelligence of children

Functioning in the permanently changing environment requires an ability to deal with problem situations. The ability to handle difficulties or create products that have a specific meaning in a given environment, in a cultural or social context was called by Howard Gardner the intelligence. The ability to resolve various dilemmas is related to analytical thinking and allows an individual to approach a new situation holistically. Creating a new cultural product is crucial for functions such as acquiring and transferring knowledge or expressing views and feelings (Gardner, 2011). Among the many types of intelligence indicated by Gardner is logical-mathematical intelligence, which has two essential features. First of all, gifted people show the ability to solve problems surprisingly fast. Secondly, the non-verbal nature of this intelligence may be observed, which means that it is possible to find a solution to a problem before it has been articulated. The process of solving the problem can be completely 'invisible,' i.e., impossible to trace, even for the person in whose mind it occurs. The ability to carry out in-depth observations and to draw conclusions from them constitutes a form of logical-mathematical intelligence which is called 'scientific thinking' (Gardner, 2002).

According to Gardner (as well as many other researchers), childhood is a crucial time in human development. The habits of the body and mind are established during that period. Creativity can either be released or blocked (Drygen, Vos, 2003). The task of education is to detect a given child's predispositions to support the distinctive type of intelligence adequately and to establish conditions that facilitate the development of the poorly shaped ones. Not everyone must and can be talented in a given field, but everyone should develop his/her abilities and predispositions in an individual way. An important issue, therefore, is the exact understanding of the child's intelligence profile, because it may enable finding the proper way to support a child facing problems with assimilating the knowledge being transferred (compensation). On the other hand, knowing the child's intelligence profile can also help to stimulate the development of its natural strengths. Due to the importance of logical and mathematical intelligence in preparing young generations for future functioning, it becomes crucial to exploit the potential of modern technologies available properly. Their widespread use has not only expanded the scope of possible actions but also offered new, attractive means and tools facilitating the development of children's intellectual potential.

Among the forms of extracurricular educational activity supporting the development of child's intelligence children's universities deserve special mention. They can shape key competences, in particular, IT skills as well as mathematical, scientific and tech-

nical competences (Recommendations, 2006). This initiative goes in line with the key priorities included in the national education policy. The implementation in the process of education systemic solutions that support creative thinking of children and teenagers and create conditions to stimulate their IT interests is a vital part of that policy.

The role of the Children's University of the Humanitas University in Sosnowiec in the context of identified challenges

The classes organized as part of the Children's University of the Humanitas University in Sosnowiec may serve as an example of educational activities supporting the development of key competences. The initiative was addressed to the children aged 6 to 12 in thirteen locations in the Śląskie and Małopolskie Voivodeships. At the same time, in nine locations in the Śląskie, Małopolskie and Opolskie Voivodeships activities for pre-school children were carried out. The latter initiative has a name 'Pre-schooler at the university'.

Mission of the Children's University of the Humanitas University in Sosnowiec

Since 2015 Children's Universities established by the Humanitas University in Sosnowiec have aimed not only at arousing children's interest in various fields of science, but also at developing the competences necessary for functioning in digital reality in a systematic, coherent and planned way. Every year over 2000 children take part in the lectures. The number of lectures carried out during the year exceeds 200.

Forms of classes for children

The idea underlying the activities promoting science among children is to create conditions for active exploration of the world and its secrets. Information and communication technologies can be the tools which support cognition in that scope. Actions aimed at developing the logical and algorithmic thinking skills while solving the real problems which can be explained based on the various scientific disciplines may serve as a good example.

The classes are implemented in the form of:

- interactive problem-based lectures complemented by the show – the use of attractive presentation methods may support focusing children's attention on the selected scientific issues; Moreover, when children may collocate the topics with the adventures they have experienced, such situation stimulates them to participate actively in finding the solution to a given problem;
- workshop classes based on the use of activating methods – during the classes the organizers put a lot of effort on creating educational situations facilitating active participation of children in solving the problems. Choosing the topic which

may attract children's attention and therefore motivate them to the greater involvement in the class also influences the development of interest in new areas of knowledge. The introduction of elements of the problem-based method is conducive to the growth of design thinking and creativity. The tasks that should be solved individually teach children how to organize their own working time whereas providing them with an opportunity to participate in the teamwork results in the development of social competences.

The basic assumption behind the majority of conducted workshops is the use of IT methods and techniques as contemporary tools of a human being. The use of digital tools should be understood exclusively as a means of achieving educational goals in various fields of knowledge, and not as the goal itself. Especially popular among young learners are programming workshops in which they can develop the ability to think logically by solving various problems. The classes involving the use of Lego Robotics, Lego Mindstorms and Lego WeDo blocks are permanently the crucial part of activities carried out by the Children's University of the Humanitas University in Sosnowiec. Not all the tasks aimed at developing the logical-mathematical intelligence during the workshops require the use of IT tools, other tools such as educational mats and strategic games are applied as well. Some workshops are carried out as field activities. Thanks to that, children have an opportunity to observe and investigate some phenomena and processes directly in their environment.

So far, the lecture themes have covered the following scientific disciplines:

- biology ('The private life of plants,' 'The world of carnivorous plants,' 'Our incredible brain,' 'Do animals play Minecraft?');
- chemistry and physics ('What are fractals,' 'The flying air,' 'The rainbow our neighbor – some words on infrared and ultraviolet,' 'Freezing experiments');
- modern technologies ('Can a man get out of a printer – about 3D printing'), Lego Robotics;
- the humanities ('Did pirates really exist?', 'Life in the late Middle Ages,' 'Is there anything rather than nothing, some words on philosophy');
- neurodidactics ('The Mind like Ferrari').

In addition to the lecture cycles, there are regular afternoon workshops for children called a 'Creativity Factory,' which includes the following classes:

- DIY – or in other words 'How to prevent boredom' – art and design classes;
- 'Dancing frenzy' – dance classes conducted by the dance studio staff;
- 'Glass painting' – art classes where the porcelain and glass are used;
- language classes – linked to the current events in a particular academic year;
- culinary workshops run by chefs of prestigious restaurants from Śląsk and Zagłębie;

- savoir-vivre – workshops aimed at disseminating the principles of good manners, including netiquette, or how to behave like a Lady and a Gentleman at the table and in other circumstances;
- 'A Young Technician – A Programmer,' that is:
 - Lego robotics – the Lego Education series of classes, related to ecological, natural and astronautics issues, conducted with the use of the Lego WeDo and Mindstorms EV 3 blocks;
 - Design and 3D printing.

The aim of the series 'A Young Technician – A Programmer' is to introduce young students to the secrets of programming and to familiarize them with the issues in the field of mathematics and physics. The use of LEGO WeDo 2.0 educational sets enables carrying out classes on diverse subjects – from ecology, nature protection, architecture and urban planning, to modern space technologies and spatial modelling. Since the academic year 2018/2019 some other innovative tools have been incorporated into the classes at the Children's Universities of the Humanitas University in Sosnowiec, thanks to which young students have an opportunity to expand their knowledge by new experiences. For instance, the VR goggles can be used to enhance the standard science workshops, what allows for the multimedia visualization of the phenomena and the processes that are investigated. Thanks to their features, the indicated devices allow conducting classes in any subject without the need for specialized and hard-to-access equipment. That is another method of exploring the world that is very attractive and liked by children.

Off-site training classes (for example a trip to the Copernicus Science Center) supplement the regular offerings.

Lecturers

The lecturers take the role of the tutors, managing the process of active construction of knowledge by children. They are specialists who convey their passion in knowledge to the youngest recipients. The group of academics includes the practitioners from the best Polish universities and science centers (including the Copernicus Science Centre and EC1 Łódź). From the very beginning, the teaching staff puts a lot of effort to make the presented offer fit into the idea of LEGO Education, which aims at providing the environment for learning by playing, which in turn may serve as a positive stimulus, facilitating the development of their cognitive curiosity and creativity.

Distinctions and awards

For Lego Robotics workshops, Children's Universities of the Humanitas University in Sosnowiec received the *Stonieczniki 2017* award in the Logic category. The award has been established by the *CzasDzieci.pl* portal, for the most developmental initiative for children aged 0–14. The prize is all the more valuable

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because it is granted by parents of children participating in actions organized by the Children's University. In 2018, classes conducted as part of the Children's University of Higher Education in Sosnowiec received the next nomination.

Cooperation with parents

While children take part in classes addressed to them, there are meetings for parents organized within the scope of 'Parent Development Academy.' The topics reflect important pedagogical and psychological issues that may be of interest to parents, for instance: How to effectively plan one's own time, A happy parent – a happy child, Prevention of threats in cyberspace.

Substantive supervision

The Institute of Innovative Education in cooperation with the Institute of Pedagogy supervise the selection of topics and the way they are delivered. Academics not only support the preparation of classes but also carry out systematic scientific research aimed at excelling the adopted methodological solutions.

The implemented projects

'A Young Da Vinci' project financed by the National Centre for Research and Development is being implemented at the Humanitas University since August 2018. It is aimed at children aged 10 to 14. A total number of 500 participants (children and parents) from seven partner communities participates in the program. Such actions aimed at developing the key and universal competences that the labor market in the future will demand are part of the university's 'third mission.' These include mathematical, naturalistic and digital competences, learning to learn, creativity, and teamwork skills. Classes conducted with adults (parents and caregivers) aim to develop parental and social competences.

Special emphasis is put on:

- arousing the cognitive curiosity of children;
- intellectual, axiological and social stimulation;
- inspiring creative thinking as well as developing interests and passions;
- promoting the culture of innovation;
- familiarizing children with the academic environment and the university as a place of scientific perception of the reality;
- integrating the local community around the academic center which can provide extracurricular educational, high quality activities, popularizing science.

The project begins and ends with a scientific conference for children, complemented by a workshop panel. The slogan 'A Young Da Vinci – biology and technology in Leonardo's life' is common to all those events. The workshop classes for children cover the following topics:

- 'A young genius' – the use of memory techniques and quick reading techniques;

- 'A young researcher' – participation in mathematics and natural science classes, that include: chemical, physical and biological experiments in a virtual and real laboratory, classes in anatomy, astronomy using VR goggles; additionally, classes on molecular cuisine and alike;
- 'A young programmer' – participating in programming classes with the use of an educational mat, Lego WeDo, and Mindstorms, Scratch as well as Dash and Dot robots.

E-learning platform

Another challenge for the children's university is the use of an e-learning platform to integrate the activities of lecturers, parents and children. The use of this method of communication and dissemination of knowledge will constitute another element supporting the development of digital competences of children and their guardians.

Conclusions

The civilization changes and the information society development are not solely based on changing the tools a contemporary man uses on a daily basis, but they denote a thorough remodeling of the methods of action. This issue is particularly challenging for teachers and educators whose role is to support children and teenagers in their development. Ensuring the conditions for developing key competences indispensable in the future is one of the primary duties of those responsible for the education of young generations. Transmission of the cultural context of people's actions is equally important.

Currently, the shortage of employees with e-competences on the labor market is systematically growing (Morańska, 2016). The so-called computer hard skills are necessary for IT professionals, but in many other professions, the efficient use of IT tools and resources while solving the real-life problems may be satisfactory. It is about the ability to apply the commonly available tools to carry out current tasks (Recommendations, 2006). Therefore, the expectation that the contemporary university should promote in the social environment the modern methodological and organizational solutions fostering the development of competences necessary in the digital world seems to be entirely natural.

New multimedia evoke extreme emotions. Young people can not imagine their lives without access to common IT tools. On the other hand, some adults perceive such tools as the destructors consuming the children's time and discouraging them from undertaking sport activities as well as participating in family life, limiting their social contacts and last but not least introducing them into spheres for which they are emotionally unprepared. However – as Kazimierz Krzysztofek, a Polish researcher on digital networks, describes in the introduction to the work of Charles Jonscher – in the era of digital transmission, a human is provided with unusual opportunities, and a machine

called a computer (...) *pushes them to higher and higher intellectual areas* (Krzysztofek, 2001, p. 13).

And it is in this area, in this context that the main advantage of digital media should be perceived: although it cannot be denied that technology brings some real threats, its positive potential is incomparably greater. It is a human, with his/her attitude, who makes a choice.

It must also be added at this point that decade after decade, functioning outside the digital world will be a difficult choice, fraught with consequences, even impossible. It may result in a digital exclusion and further, in social exclusion.

It should be stressed that it is not the information technologies but a man who decides about the nature of relations with them and with other users of the network. In the digital world, the quality of 'human-technology' and 'human-human' relations depends on the level of cyberculture. If therefore, it is expected that young people obtain the competences necessary for the smooth functioning in the future, it is essential to pay attention to shaping their proper relations with those technologies. The issues of using multimedia and activating methodological solutions as well as involving students in the process of constructing knowledge, are constantly at the center of pedagogical discourse. Children's universities enable the education process to go beyond traditional institutions such as family and school. The research shows that young people are not afraid of the digital world, which is their natural environment, they only need guides, a modern Plato and Aristotle leading them to discourse that facilitates development and that reduces side effects.

And finally, the following conclusion can be formulated: we do not have to be afraid of the cyberworld but rather of refraining from active and rational participation in it (Morańska, 2017). And these are activities that can be supported by university specialists in the

most professional way within the framework of children's universities, raising interest in science.

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Abstract

Civilization changes related to the development of information and communication technologies require the formation of new competences in the society, the possession of which will determine the quality of life in the digital world and rational participation in cyberculture. The implementation of this task becomes the special responsibility of educational institutions that aim at stimulating the growth of interests of children and youth in the areas of knowledge crucial for the development of the information society. It is extremely important to take actions supporting the development of logical and mathematical intelligence and digital competences. Their possession is of key importance for the conscious, rational and creative use of new technical possibilities. One of the important initiatives supporting this task is the organization of classes within children's universities. The article describes the projects undertaken at the Children's University of the Humanitas University in Sosnowiec. Their main goal is to provide conditions for facilitating the development of interest in science, through its popularization. The main assumption is to implement the idea of active learning in the digital environment. Through experiencing and experimenting with the use of information technology methods and means, children and adolescents can develop competences necessary for efficient functioning in the information society.

Key words: information society; cyber-culture; education; key competences

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The organization of the 'Little Medic' project in the opinions of teachers – group tutors

The project on the popularization of the life sciences among children from primary schools – the 'Little Medic', has been implemented for six years as part of the cooperation of the Poznan University of Medical Sciences and the Polish Academy of Children (PAD). In the Spring semester of the 2016/2017 academic year, the workshops carried out as part of the University of a Young Explorer were also included in the project. The whole initiative is non-profit. The classes are aimed at children between 6 and 12 years of age and are based on promoting autonomy and creativity among the youngest students. Their goal is to stimulate cognitive activity, popularize knowledge and maintain children's primal curiosity about the world. The participation in the project enables children to get access to the latest achievements of science and scientists, as well as to develop their scientific passions.

Additionally, it provides an opportunity to share the passions with peers in unique circumstances. Thanks to this, learning becomes an incredible adventure and a personal experience for children. It is also a new didactic experience for academic lecturers because children are entirely different recipients than university students.

The outline of the 'Little Medic' project

The classes organized within the project take place once a month in the hall of the Congress and Teaching Centre of Poznan University of Medical Sciences and last 90 minutes. Children participate in the cycle of classes together with school teachers who nominated them for the project. Little Medics meet regularly from October to June, discover the secrets of medical knowledge and share their passions and interests with their peers. The objectives of the project are presented in Table 1.

During the academic year, young students take part in 18 lectures, conducted both by the academics as well as by their peers. At the beginning of the academic year, during the inauguration ceremony, they take an oath, sing the students' hymn *Gaudeamus igitur* and receive their indexes, in which they collect stamps during the year – the entries. Children actively

Table 1. The mission of the 'Little Medic' project

– supporting the development of the scientific potential of children and youth
– enabling access to the latest scientific achievements and scientists
– arousing interest in medical sciences and familiarizing the young students with the basics of research methods
– developing children's scientific passions and providing the opportunity to share them with peers
– promoting healthy lifestyle and pro-health attitudes among children
– shaping healthy eating habits and hygiene among children
– presenting knowledge in the field of human anatomy and body functioning, medical rescue, diagnosis and treatment of diseases, prophylaxis, and pharmacy
– university's promotion

Source: Author's own study.

participate in classes, giving lectures to their peers (the youngest lecturers are 7 years old) and helping to organize meetings on a voluntary basis. During the formal vote of acceptance at the end of the academic year, they receive diplomas. Table 2. presents the framework program of the meetings.

In the academic year 2015/2016, the children's university activities were expanded by a research projects competition for Little Medics. It is aimed at school groups that have taken up research on any topic in the

Table 2. The framework programme of the meetings

Registration of participants
20–30 minutes: the lecture by the Young Speaker
10–15 minutes: questions to the speaker
20–30 minutes: the presentation by an academic lecturer
10–15 minutes: questions to the speaker

Source: Author's own study.

* Poznan University of Medical Sciences

field of broadly understood natural sciences and are willing to present how they planned their research, carried it out and what results has been achieved. That is to encourage children and their teachers to actively participate in the project, not only through individual presentations but also by group co-working in school conditions¹.

The students of the 'Little Medic' project participate in other projects as well. They take an active part in the annual International Conference for Children in Gdansk. *During the conference, specialists from various disciplines conduct academic lectures and workshops for students between 6 to 12 years of age. Young Scientists aged 6–12 years have an opportunity to share their scientific passions during their lectures and workshops by presenting their knowledge to peers and adults* (Polska Akademia Dzieci, 2018). They also participated twice in the 'Lectures of Free Children' within the scope of Poznan Malta Festival. The project organizers have been cooperating with the Redemptoris Missio Humanitarian Foundation for several years. Every year, young students are also involved in the 'Bandage to the rescue' campaign, promoting it in their schools. Thanks to the involvement of students and teachers participating in the project, many dressing materials are collected for the Foundation. In this way, volunteering is promoted. The project organizers also established cooperation with the Bone Marrow Team – an organization supporting and promoting the bone marrow donation, conducting educational activity on hematopoietic system diseases treated with bone marrow transplantation. Some students' organizations (listed in Table 3.) support the project as well. Their members serve as volunteers and help to organize the meetings.

The opinions of teachers participating in the 'Little Medic' project

The surveys have been conducted every year since 2013, at the turn of April and May. Their goal was to get to know the opinions of teachers participating in the 'Little Medic' project on the usefulness, quality, organization, and conditions for conducting classes, the proposed thematic scope and the competences of lecturers and coordinators. Additionally, in 2017/2018, an additional questionnaire was prepared to obtain better characteristics of the participating groups (students and their teachers).

Research material and methods

A total of 177 teachers (169 women and 8 men) and group supervisors participated in the research carried out during the six years of the project's activity. The respondents were representatives of 92 schools – including 66 from Poznan and 26 from other cities in the Wielkopolska Voivodeship (Table 4.).

Seven questions were assessing the usefulness, quality and thematic scope of the classes, the competences of lecturers and coordinators as well as learning conditions and classes' organization and a few socio-demographic questions included in a questionnaire. The answers were categorized on a scale from 1 to 5, with 1 meaning very bad and a 5 very good. A more detailed survey aimed at obtaining the characteristics of project participants was conducted in the years 2017–2018. It contained additional questions related to demographic aspects as well as teachers' qualifications and professional experience.

Table 3. Student organizations involved in the project

Organization name	Type of the engagement
IFMSA – International Association of Medical Students	registration of participants, then organizational aspects of the meetings
Students' Scientific Circle of Ethics and Bioethics	registration of participants, then organizational aspects of the meetings
ASRiMK – Academic Rescue and Disaster Medicine Society	Ensuring safety during the meetings, organizing the rescue presentations at the end of the project

Source: Author's own study.

Table 4. The 'Little Medic' project in numbers in the years 2012–2018

Years	2012/2013	2013/2014	2014/2015	2015/2016	2016/2017	2017/2018
Number of participants	380	380	380	390	400	400
Total number of schools	17	16	16	15	15	13
Schools from Poznan	10	13	12	12	11	8

Source: Author's own study.

¹ The promotion of the project takes place mainly via the internet, through the 'Little Medic' website (<http://malymedyk.ump.edu.pl>), containing information about the project and on Facebook, (<https://www.facebook.com/MalyMedykUmp>), where one can find news, meetings and photo galleries.

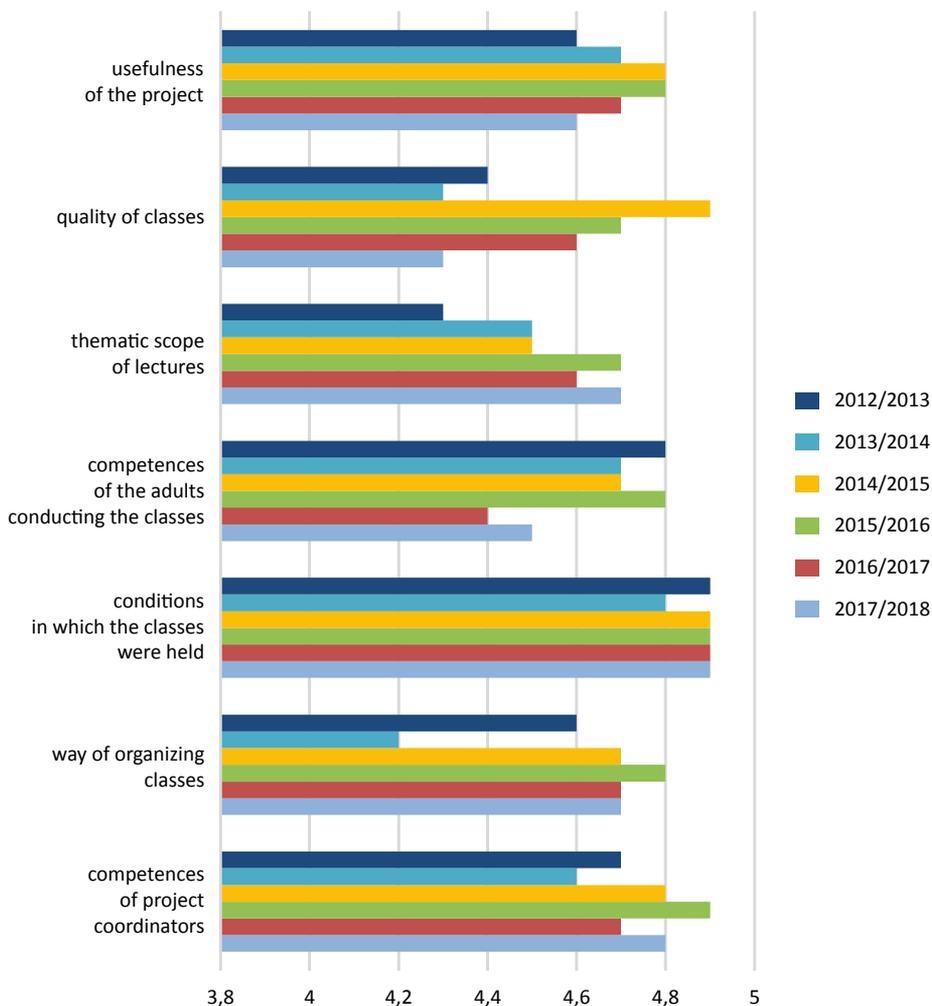
The organization of the 'Little Medic' project...

The results of evaluation surveys in the years 2012–2018

Figures 1–8 present the average ratings regarding different aspects of the project, such as:

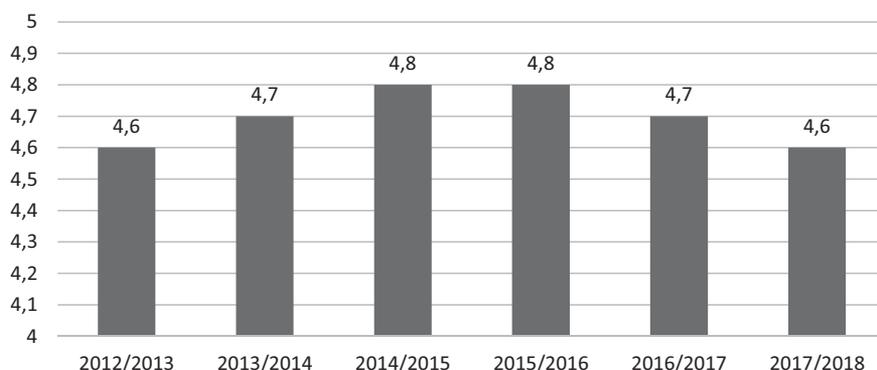
- the usefulness of the project;
- the quality of classes;
- the thematic scope of lectures;
- the competences of the adults conducting the classes;
- the conditions in which the classes were held;
- the way of organizing classes;
- the competences of the project coordinators.

Figure 1. Average evaluation of the project, in subsequent years



Source: Author's own study.

Figure 2. Evaluation of the usefulness of the project in subsequent years



Source: Author's own study.

Every year, from its very beginning the project was very well evaluated by teachers, the lowest average grade was 4.2 and it concerned the organization of classes in the academic year 2013/2014.

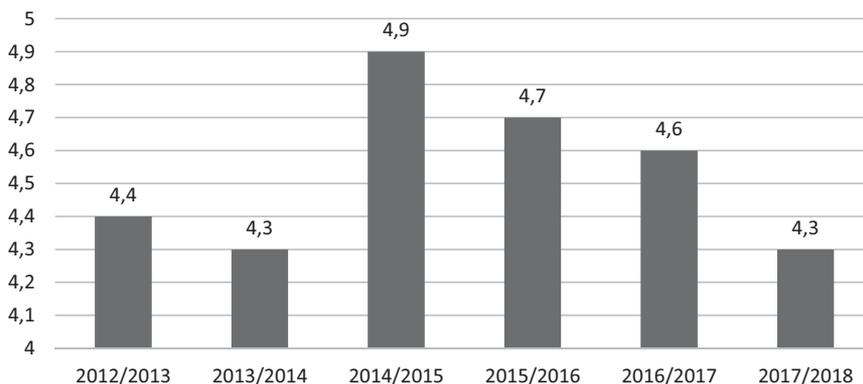
The assessments in individual years of the project in all analyzed aspects are very similar.

Teachers-tutors rated the project above average in all categories, and the conditions for conducting classes

reached the highest score, which is not surprising as the classes take place in the modern infrastructure of the Poznan University of Medical Sciences. In the last years, a constant high grade was given to the choice of the class topics, the coordinators' competences and the way the project was organized.

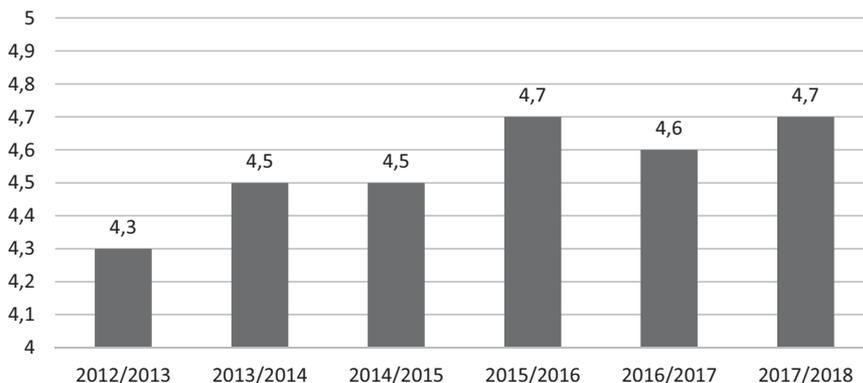
The average grades from the last year are collected in Table 5.

Figure 3. Evaluation of the quality of classes in subsequent years



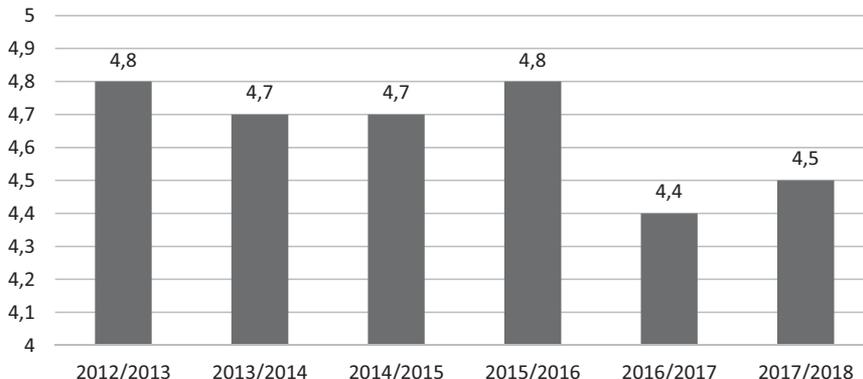
Source: Author's own study.

Figure 4. Evaluation of the thematic scope of lectures in subsequent years



Source: Author's own study.

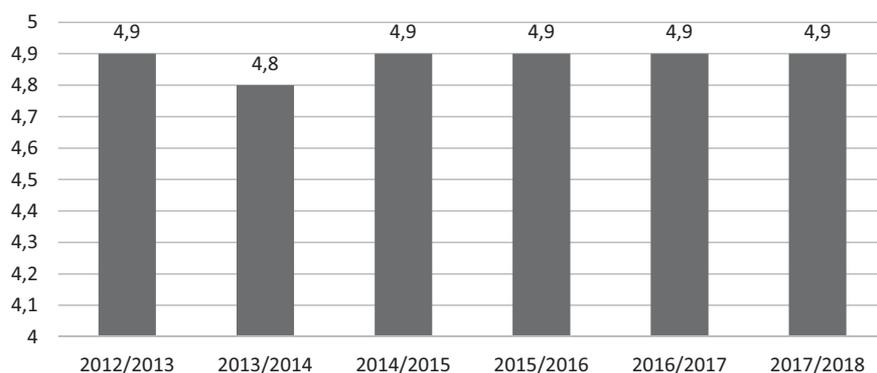
Figure 5. Evaluation of competences of adult lecturers in subsequent years



Source: Author's own study.

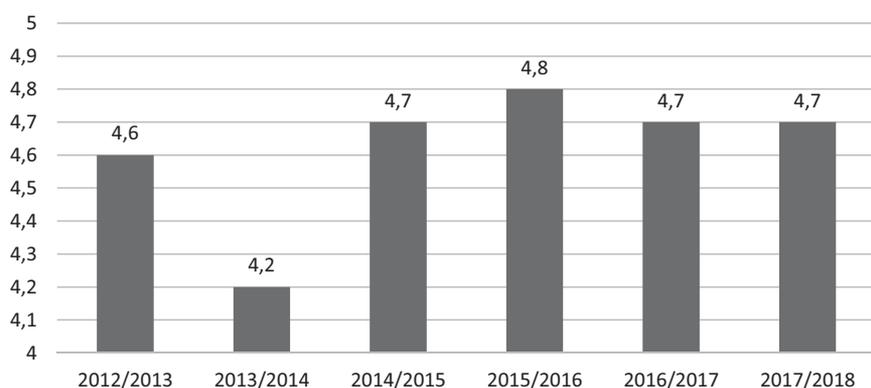
The organization of the 'Little Medic' project...

Figure 6. Evaluation of the conditions in which the classes took place in subsequent years



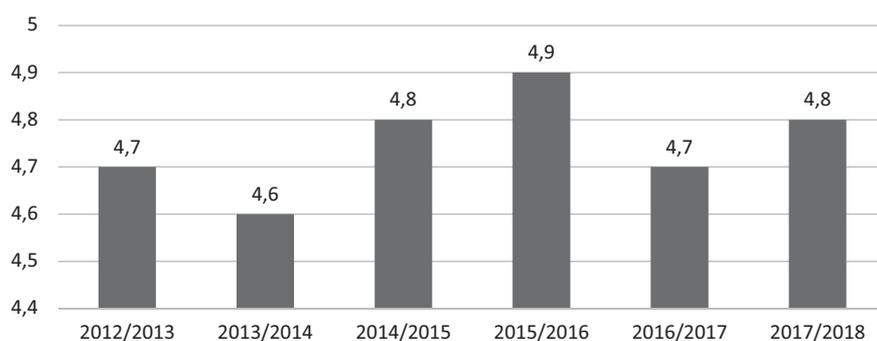
Source: Author's own study.

Figure 7. Evaluation of the way the classes were organized in subsequent years



Source: Author's own study.

Figure 8. Evaluation of competences of project coordinators in subsequent years



Source: Author's own study.

Table 5. The average grades from the last year

Question	The average grade
The usefulness of the project	4,6
The quality of classes	4,3
The thematic scope of the lectures	4,7
The competences of adults conducting classes	4,5
The conditions in which the classes were held	4,96
The way of organizing classes	4,7
The competences of project coordinators	4,8

Source: Author's own study.

The results of additional surveys

As it was already mentioned the additional questionnaire was carried out in the years 2017–2018. Tables 6–8 present the opinions of 26 teachers from schools participating in the project.

Teachers with seniority over 20 years as well as people representing rural places assessed the project best. The observation of the latter group may result from the teachers’ conviction about the special educational needs of children who learn far from large urban agglomerations, which limits their contacts with scientific communities.

the places nearby participated in the project during the past of 6 years.

The idea of promoting knowledge in the field of biological and medical sciences, combined with actions inspiring and motivating school students to explore the secrets of research work, is quite common in many regions of the world. In each case, however, it may have a different form resulting from local specificity and technical or financial possibilities. In the United States, for instance, the Little Medical School®³ project is being implemented, which includes lectures and practical classes for school-age

Table 6. The average quality assessment of the ‘Little Medic’ project depending on the school location

School location	Number of surveys	The average ± standard deviation	Median (minimum – maximum)
A big city (over 500 000 inhabitants)	15	4,67 ± 0,32	4,71 (4–5)
An average city (20–500 thousand inhabitants)	4	4,89 ± 0,14	4,93 (4,7–5)
A small city (up to 20 thousand residents)	5	4,31 ± 0,43	4 (4–4,86)
A village	2	4,93 ± 0,1	4,93 (4,86–5)

Source: Author’s own study.

Table 7. The average quality assessment of the ‘Little Medic’ project depending on the age of the teachers

Age	Number of surveys	The average ± standard deviation	Median (minimum – maximum)
25–40 years	17	4,61 ± 0,38	4,71 (4 – 5)
40–60 years	9	4,73 ± 0,31	4,71 (4 – 5)

Source: Author’s own study.

Table 8. The average quality assessment of the ‘Little Medic’ project depending on teachers’ seniority

Seniority	Number of surveys	The average ± standard deviation	Median (minimum – maximum)
Below 5 years	7	4,61 ± 0,28	4,57 (4,14 – 5)
5–10 years	7	4,71 ± 0,37	4,86 (4 – 5)
11–20 years	7	4,57 ± 0,53	5,00 (4 – 5)
> 20 years	5	4,74 ± 0,16	4,71 (4,57 – 5)

Source: Author’s own study.

Discussion of the survey results

The ‘Little Medic’ project is part of a wider initiative – PAD², which provides the broadly understood extracurricular education for children aged 6 to 12. Numerous university centers in Poland are involved in that initiative. The organizer of the ‘Little Medic’ is Poznan University of Medical Sciences. Over 2300 children from nearly 100 schools from Poznan and

children (primary and middle school) interested in medicine. The classes are conducted in dozens of American cities, as well as in several locations outside the US. The latter is possible by a franchise agreement. The fee necessary to take over the rights to carry out the project ranges from 50 000 to 400 000 US dollars. Under this agreement, among others, initial training for staff and logistic support necessary for the further promotion of educational activities in a given region are provided. Classes are interactive. Young students

² <http://academyofkidspoland.wixsite.com/polskaakademiazdzieci>

³ www.littlemedicalschool.com

The organization of the 'Little Medic' project...

learn about the physiology of the human body, explore the secrets of medical diagnostics, learn the principles of first aid, acquire some medical skills (they can, for example, participate in the course: basics of surgical stitching). At the end of the program, students get special diplomas certifying the graduation (Little Medical School, 2018).

A good example of similar educational activities conducted in Europe is the Children's University in Vienna⁴, under the patronage of the largest Viennese universities. The formula of the program is similar to one discussed earlier in this article. It mainly includes hands-on, interactive workshops, in which young medical students working in small groups have an opportunity to acquire specific practical skills. Students can participate in lecture and seminar cycles. Classes usually last from 4 to 5 days and are organized during the summer holiday. Apart from the medical issues, some other are also discussed: their scope is quite broad – from art and theatre, through law, theology or history to computer science, the choice depends on the interests of a particular group of participants (Kinderuni Wien, 2018).

The classes conducted as part of the 'Little Medic' initiative have a slightly different formula. They mainly include a series of lectures, prepared and held by children and by full-time research and teaching staff. The whole course lasts a year and resembles an academic year in its scheme, with its official beginning and ending, the main point of which is awarding diplomas. Despite organizational differences, compared to the educational initiatives discussed in the USA or Austria, there are though some features common to the projects listed. First of all, it is their goal. Both initiatives – the American and the Polish – aim at stimulating the development of school children's interests through the promotion of knowledge in the field of medical sciences. Concerning the 'Little Medic' program, data derived from the surveys carried out every year confirm that the adopted formula of the classes and the usefulness of the whole project are assessed very well by teachers. Therefore, it becomes crucial nowadays to identify areas in the Polish education system in which the significant deficiencies exist and to what extent the initiatives like 'Little Medic' could help to eliminate those deficits. The issue seems to be particularly crucial in the context of ongoing changes in the way of organizing early childhood education in our country in recent years.

The report *Education of Children and Young People – the selected challenges and areas of inequality*, published in 2017 by the Institute of Pedagogy of the University of Wrocław reveals that one of such problematic areas is supporting exceptionally gifted youngest students in the development of their unique skills and talents. The lack of appropriate didactic competence among teachers may result in them being not able to adjust the lessons to diversified potential (and in conse-

quence – different expectations) of their pupils. As a result, it may lead to insufficient stimulation of children for further development and going beyond the adopted programme framework and content of the textbooks (Plichta, 2017, p. 165). The data published by the Supreme Audit Office in 2016 point to this problem and confirm a decline in the effectiveness of education, especially in profiled schools, where the ability to arouse students' interest in a narrower thematic area is crucial for the effectiveness of the education process (NIK, 2016). For example, according to those data, every second graduate of the primary school of sports championships does not continue education at a middle school of the same kind, and almost two-thirds of middle school graduates resign from further education profiled in this way. That is indeed a significant problem of the school education system in Poland, as it is the teacher and their classes that are considered to be one of the main factors stimulating the development of students' interests (Buchcic, 2015, p. 9). Therefore, the fact that teachers regard the 'Little Medic' project as important and evaluate its content very well may to some extent testify that it meets the teachers' expectations and at least partially fills the gap in ways to stimulate the development of students' interests. In this particular case, the classes cover the subject of biological and medical sciences, in which direct contact with the discussed issues is of great importance. The research conducted by Elżbieta Buchcic indicates the crucial role of activating methods in education in the field of natural sciences because they allow a student to participate actively in the didactic process, and to co-decide on what and how to learn (Buchcic, 2015, pp. 8–22). Only such an active form of education gives an opportunity to arouse students' interests, which in turn promotes the development of passion and learning. The classes implemented as part of the 'Little Medic' project meet the indicated criteria.

Julian Piotr Sawiński, a member of the editorial team of *edunews.pl* portal on modern education and also employed at the Teacher Education Centre in Koszalin approaches the issue of raising the cognitive interest of young listeners in a slightly wider manner. Referring to various educational and psychological theories (such as proposed by Edouard Claparede or Stefan Baley, for instance), he indicates that this process should possess the following key features. It should stimulate a positive attitude and curiosity of young students, should also direct them towards independent learning, should awaken their passion and develop hobbies, and be interesting (Sawiński, 2010). The indicated components are all present in the classes offered by the 'Little Medic' project team. Therefore, this initiative seems to be a valuable element supporting the educational process – especially early school education, mainly by stimulating cognitive interests of students, which – according to the

⁴ www.kinderuni.at

theories mentioned above – form the foundation of an effective teaching system. The high average grades given by teachers who play a vital role in the education system in Poland prove the importance of the educational activities conducted within the project.

In connection with the pursued goals, and most likely with the highly attractive subject concerning medicine, the 'Little Medic' project enjoys great interest. It is probably also important for the participants that there are no participation fees, which distinguishes the project from the Little Medical School® initiative in the USA. A significantly good assessment of the conditions in which the classes are conducted as well as the greatly appreciated competences of the project coordinators and lecturers are also of key importance. The indicated popularity is visible also in the recruitment process – usually after only two or three days, there are no places in the groups left. The teachers from the Children's University in Vienna have a similar experience; the recruitment process is highly formalized and multi-stage because the number of students willing to participate in the classes is much higher than the number of places available.

The possibility of conducting lectures by students constitutes the additional educational value of the 'Little Medic' project and contributes to innovativeness and popularity of the whole initiative. The organizers try to ensure that to a particular school group belong students from different classes. Though it may be more convenient for a given school to create the group based on one chosen class in practice it results in lower interest and engagement of the participants. Creating the mixed groups in which there are students from different classes (i.e., 3, 4 and 5) encourages the transfer of knowledge from the lectures at children's university to school. The students inspired by the lectures of their peers can present their lectures at school or in a class.

The results of an additional survey conducted only in 2017/2018 have brought the information about the geographical reach of the 'Little Medic' project, the seniority status and professional qualifications of teachers and tutors of students' groups. They have been collocated with the evaluation data from the same period. Although there were no statistically significant differences between particular subgroups, one may spot some regularities. It turned out that older teachers with the longest seniority and also representing rural schools, gave the project highest scores. It is difficult to explain these phenomena clearly. Perhaps older teachers, longer involved in their profession, notice more distinctively the lack of opportunities to stimulate the interests of their students.

In contrast, younger teachers, who achieved their educational competences in more modern reality, are better acquainted with new methods and means of teaching. This fact might have slightly diminished the importance of the project in the eyes of this group of teachers. On the other hand, a better evaluation of the project by non-Poznan school teachers may reflect the lower opportunities for extracurricular

additional education activities in the case of children from outside the large agglomeration. In this context, the possibility of free participation in some extra activities is particularly valuable. The above observations are a sufficient incentive to continue this part of the survey – apart from the evaluation questionnaires, used by the organizers from the very beginning – in the next years of classes conducted under the 'Little Medic' project.

Conclusions

The main goal of the 'Little Medic' project is to stimulate the development of students' interest in the issues related to human health. During the recent years it has been proved that the project activities may efficiently supplement the school-children educational process in the Wielkopolska Voivodeship in the field of biological and medical sciences. Also, the very good opinions of teachers representing schools that participate in the project confirm the high quality of classes. The tutors of young students highly appreciate the idea of the project, the scope of the issues being discussed, as well as the organizational aspects of the initiative. Similar projects are also implemented in other cities, and other countries as well – both in Europe and beyond. Each of them has its specific conditions and rules of conduct, depending on the individual situation in a given region. The aforementioned projects, however, are based on a similar idea, have common educational goals and they all confirm the high interest in the subject of medicine among children in the early school age.

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The organization of the 'Little Medic' project...

Abstract

The 'Little Medic' project has been carried out at Poznan University of Medical Sciences for six years. It enjoys great popularity. Every year, about 400 pupils from primary schools from Poznan and the surrounding area in the age of 6–12 participate in it.

The study aims to present the organizational specificity of the 'Little Medic' project, and the opinions about it expressed by teachers participating in the project with their students. At the end of each academic year, teachers take part in an anonymous survey summarizing and assessing the project.

The first part of the article presents the method of the 'Little Medic' project organization. In particular, it describes the elements distinguishing the project from other children's universities in Poland. The second part presents the analysis of evaluation data collected during the six years of the project.

Long experience in running classes for children as part of the 'Little Medic' project allows for conclusions about the usefulness and innovativeness of this form of lesson conduct, and the survey results confirm the high level of teachers' satisfaction with the proposed way of organizing classes.

Key words: children's university; children's education; health education

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EUCU.NET was created in 2008 as a EU co-funded project.

After the project end in 2010 activities continued because of the interest and need for cooperation and exchange. Therefore EUCU.NET was established as a self-financed NPO in 2011.

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Children's University of Interesting History – learning the history of Poland and the history of the world

Łukasz Przybyłek*

University is a place where people can pursue their passions for research. It is university where one can meet people, who are keen on observing phenomena and analyzing facts closely. People, that are curious about the world around them and have desire to explore it. At the same time, the university could be associated with tedious work, making new discoveries and also – the workplace for adults.

Although the Children's University sounds like an oxymoron, this is a deeply thought off and sensible idea. Children can develop their interests there and get acquainted with the academic atmosphere and space. They can discover that apart from the knowledge 'delivered' at school, many other interesting subjects and issues worth exploring exist. There are places in which extraordinary secrets may be hidden, waiting to be discovered by those who know where to look for them.

Humanist with a capital H

The Children's University of Interesting History (DUCH¹) is one of such places. On selected Saturdays during the school year, several hundreds of young enthusiasts of science participate in the classes organized by DUCH, listen to the lectures and get involved in the discussions. What distinguishes this initiative from others, is its subject – history and related disciplines. At first glance, it may be surprising. Thinking about academic research, we usually have in mind scientific experiments in the area of, for instance, natural sciences. Humanities do not seem to be very attractive and, what is more, difficult to present in a spectacular, eye-catching way.

Nonetheless, the humanities, although slightly marginalized by modern societies, are crucial to understanding contemporary processes and changes. They are essential for a solid and thorough education. The lecturers of DUCH for a couple of years are trying to prove that they can fascinatingly talk about history. Acting in a multisensory way to awake children's

interest in humanities is the basic concept behind classes organized by DUCH. The classes to be engaging should attract children's attention in many ways: through listening to the stories, watching, touching props and even smelling things (e.g., spices). It is also important to combine lectures with workshop activities that involve movement activity, performing tasks, teamwork, and discussion.

The experience of DUCH shows that the moments of seeming relaxation and unscheduled actions strongly influence the final success. First and foremost, adequately chosen activities should be entertaining for children as well as give them a break in intellectual work. On the other hand, they should illustrate and enrich the subject content. They should be chosen carefully concerning many factors. First of all, they should be adjusted to the age of children, their knowledge and skills. For example, a six-year-old grade 0 student at school can read quite well at the end of a school year, but the same student from a kindergarten not necessarily. The topic of the class and the group size are other factors that also affect the choice of activities. The younger the children, the more elements of play and fun should be included in the program of activities. For example, breaking codes can be entertaining for teenagers but may be boring for the first-graders.

Where wisdom resides, or in other words, about Greeks, Socrates and more – a case study

In the following case study, one of the numerous topics discussed during the Children's University of Interesting History classes will be described: Where wisdom resides, in other words, about Greeks, Socrates and more. The issue was the subject of discussion in every DUCH group, namely with the Observers,

* Children's University of Interesting History

¹ This acronym is in Polish a word game – DUCH stands from the Polish name *Dziecięcy Uniwersytet Ciekawej Historii* the exact translation of which is Children's University of Interesting History, but DUCH is also a noun which means a ghost in English. (Ed.)

Explorers, Discoverers, Travelers, and Creators. In the subsequent sections, the author will explain the approach taken adequately to the age of participants. But first, it is worth to outline the issues common for all the groups mentioned above.

Socrates is definitely one of the most prominent historical figures in the European civilization². It is impossible to imagine our way of thinking, and even more, our culture, without that citizen of Athenian polis from the 5th century before Christ. The bibliography concerning Socrates could fill at least two large trucks, and this amount is growing systematically (e.g., Jaspers, 1999; Guthrie, 2000; Krokiewicz, 2000). Therefore, it is worth to stress on the very beginning that the primary task of the Children's University of Interesting History is to help children to 'make friends' with the leading figures of the common European imagination. That may be called some co-parenting as well. In other words, the most important heroes of history are invited to play with children on a playground. They are encouraged to play, and that way, to live and experience together. There is probably no need to explain that the ability to remember something increases when proper and deep emotions accompany the learning process. At the same time, it is worth to mention, that boredom, so frequent and sometimes even accepted in many school classes, puts the traditional educational system at a disadvantage.

In the teaching process, it is assumed that the teacher has broader knowledge than a student. Moreover, the teacher knows the goals and leads the student to achieve them. They can be both cognitive (building knowledge) and formative (referring to emotions and attitudes). However, the tendency – dominating in pedagogical theories – to split one holistic experience into two different areas seems to be wrong. Such an approach to teaching is present both in humanities and social sciences. And it is too often forgotten that learning, like any other experience, should be viewed holistically in the context of one's individual experience and personality. This concept is not at all new. It is enough to mention the motto of Ignacy Krasicki, Prince-Bishop of Warmia – 'play to learn.' In this context, the popular phrase about history 'at one's fingertips,' that also guides activities of the Children's University of Interesting History, is not just a cliché. If something is within our reach, we can discover it, look for and watch it closely. Moreover, we can interact with it and thanks to that create a common world we live in.

For that reason, children become familiar with Socrates during one of the first DUCH classes. He was the citizen of Athens, born around 470 BC (died in 399 BC). According to Karl Jaspers, he is one of

the four authorities of contemporary civilization, next to Buddha, Confucius and Jesus (Jaspers, 1999, pp. 5–36). However, during the first classes not the significance of Socrates philosophy was discussed but a few biographical and historical facts concerning his life. So, children learned about Socrates' conversation with a friend on the Athenian market. Socrates told his friend about the strange answer Pythia gave him to the question 'Who is the wisest man in the world?' Students also learned about Socrates searching for someone wiser than himself. Older groups discussed the parts of the Euthyphro dialogue, in which the author had tried to find the real meaning of piety. It is worth to mention that Socrates's questions were always thoroughly thought off, he paid a lot of attention to ask the proper person at the appropriate time. He asked the people who, with their behavior, social role or personality, gave at least hope if not a guarantee that they knew the answer. Euthyphro was heading to the temple when Socrates asked him about piety.

The judgment of Socrates, his defense and death were the next topics discussed by students from older groups. They read the parts of the *Criton* dialogue referring to the possibility, which was offered to Socrates to help him avoid the death penalty. The essential concept of the teaching program of the Children's University of Interesting History is stimulating active learning. In that case, children had to decide on their own what would they do if they were Socrates or his fellow citizens. Thanks to this experiment, they became personally involved in the events. However, one should not forget that even the observation can be active and creative. Because of that, the overview of the topic *Where wisdom resides, in other words, about Greeks, Socrates and more* should start with classes for the youngest groups – the Observers and the Explorers.

A strange man with a beard – Socrates arrives

Apparently, Socrates was ugly, very ugly. Initially, his appearance on the agora should have surprised his fellow citizens. However, Aristotle (a student of Plato, in some kind an 'intellectual grandson' of Socrates) noticed that surprise was the beginning of knowledge. And that is the reason why the word 'interesting' appears in the name of the Children's University of Interesting History. But, the 'interesting history' is not only the set of examples and curiosities. As Stagirite³ rightly put it, curiosity is, after all, only the beginning of knowledge, not the end. Therefore, the teaching program of the Children's University of Interesting History focuses on stimulating children's interest in

² The staff of the Children's University of Interesting History appreciates the value of the Greco-Roman tradition. Its aspects, so clearly visible in Anglo-Saxon culture, unfortunately in Polish schools are not so much emphasized. The award-winning program *Łacina wśród nas* is an example of the University's creative work in this area.

³ Stagirite is a nickname of Aristotle, derived from the name of the city Stagira, where he was born. (Ed.)

history. However, the actions are not limited to raising the interest, as can be seen on the example of the oldest group – the Creators.

In the light of above, it is understandable that the classes with youngest groups of Observers and Explorers focus on ‘watching’ and ‘spotting.’ The lecturer wears an Athenian outfit from the fifth century BC. Unusual clothes like chiton and sandals intrigue students. The lecturer may use their interest to explain why he/she has chosen such a costume. Children in the youngest groups have an amazing sense of observation, and simultaneously they are not so much tempted to think, as adults do, schematically. Therefore, they accept otherness quite easily. It makes them more curious than hostile. For them, Socrates quickly becomes a real person and partner for conversation.

Homework is a crucial element of the classes. Despite the name, it has nothing to do with traditional school homework. Therefore, the DUCH educators while designing the tasks refer to students’ everyday experience. In this case, children should try to answer the question: *Who, in your opinion, is the wisest person in the world?* They can discuss this question with their parents, other family members or peers.

Such task should stimulate the child’s independent thinking. It is an invitation to discussion. The teachers at the Children’s University of Interesting History ask questions that require consideration – they cannot allow for just repeating what was memorized. In other words, it is more about making student to ‘understand’ rather than ‘know’ and thanks to that ‘wonder,’ ‘ask’ and ‘look for answers.’

Another aspect of teaching used during the Observers’ and Explorers’ classes regards their everyday language experience. There is no more accessible material for observation than commonly used words. Concerning Socrates, the very word ‘philosophy’ clearly consists of two Greek words ‘Philo’ and ‘sophy.’ It gives the teacher an opportunity to ask children if they know any Sophy. Usually, they know. It could be the name of a grandmother, sister or friend. So suddenly, the familiar name Sophy, used by children every day, becomes foreign and full of strange meanings. Students can observe how history, even the ancient one – Greek, affects their every-day life. The similar situation concerns words that are created in Polish by suffix ‘fil’ such as ‘polonofil,’ ‘rusofil,’ ‘bibliofil’ etc. Once again, one may say that the history is within reach, and in this case ‘the reach of the tongue.’

By using the elements of drama, students learn the story of Socrates’ life in a way which is adequate to their age and capabilities (Guzy-Steinke, Wilk, 2009).

What did you do to Athens, Socrates or why has history gone that way?

Children from grades 4 to 6 are Researchers and Travelers. Their classes at the Children’s University of Interesting History go beyond the observation

as it was the case with younger students. Their historical knowledge is built and extended using other teaching methods, not the elements of drama or the costumes. They learn about Socrates and his story in a broader context. While it is true that context was important for younger groups as well, it is also true that it referred mainly to some aspects of everyday life (costumes, language). Researchers and Travelers receive more information from teachers than their younger colleagues. It is worth to observe, that the case of Socrates, although unique, was firmly settled in historical events. One may say, that the Athenian democracy, created by a particular society sanctioned the death penalty for the philosopher. The lives of individuals must always be seen in the broader perspective of historical context (Hansen, 1999, *passim*). A period of long-lasting war between Athens and Sparta, as well as the rule of tyrants, preceded the year 399 BC. The tragedy of Socrates may indicate the collapse of Athenian democracy. In those times, Socrates was not the only victim sentenced by law murder. For these reasons, the groups of Researchers and Travelers analyze the process of Socrates, as well as the ostracism and its political significance more broadly. Students have to face the questions – how the Athenian democracy operated and if there were stronger arguments that might have been used in Socrates’ defense (so criticized later by Plato). As part of classes, Researchers and Travelers vote for Socrates being guilty or not guilty. Thanks to that, they can feel responsible for their decisions, as it is also the case in younger groups. That leads them to reflect on the causes and consequences of specific historical behavior. And this is the main aim of these classes.

Children also discuss some parts of *Criton dialogue*. Criton was Socrates’ friend who offered him help to escape from prison. Socrates rejected the offer with disdain and gave a speech about the duties of a good citizen. Prior to learning about philosopher’s attitude, students must decide by themselves how to respond to the offer of Criton. If their decisions are different than the decision of Socrates, they have to consider in a group what was the reason for that. The questions students have to answer are following: *Is it possible that the differences depend on something else than just natural differences of human character? What did ‘being a citizen’ mean to the ancient Athenian?*

Travelers come back to the past, but not to stay there, but to return and confront the collected data and experience gained with the contemporary world. Would it be possible to repeat the statement of Socrates? Could anyone like Plato be found in the Stalinist labor camp? Would it be possible in totalitarian systems for a person sentenced to death to give a lecture? As the experience of the groups of Researchers and Travelers indicates, the story of Socrates brings more questions than answers. However, the culmination of the whole teaching program is to come only on the next level of analyzing the history, which involves Creators.

Many faces of Socrates – the task for a group of Creators

Leszek Kołakowski said that the significant characteristic of the European culture is the ability of self-questioning. It is worth to notice that this element of our identity comes from Socrates. In his speech to the Athenians, he compared his role in the society to the task of a horsefly. The insect annoying a pasturing horse does not allow it to become lazy and stupid. The older group of the University students – Creators, learn how to question our current knowledge on Socrates. According to Jaspers *Anyone who studies written works about Socrates creates an individual picture of him. From all possibilities, we choose our image of Socrates. We think about him as a real person, despite being aware that our creation is uncertain* (Jaspers, 2000, p. 30).

In the European culture, Plato's interpretation of Socrates story is commonly recognized as the right version of the events. Socrates himself did not write a single sentence. To be more precise, none written piece of philosopher's work has 'survived' to our times. Everything we know about him comes from the stories told by other people. For many years in our culture, Socrates used to be compared to Jesus. To not extend this thread, one may only spot, that they both did not write anything by themselves. More precisely, no words written by them have left. So, who were the real Socrates? We have versions of Plato, Xenophon, Aristophanes (in his comedy *Clouds*). Diogenes Laertius mentioned Socrates in his biographies of ancient philosophers as well.

Also, in Aristotle's works, some pieces of information related to Socrates appear. Moreover, we have a rich tradition and many historical and archeological research regarding life in ancient Athens. How can we recognize the truth within a massive load of information? Socrates is a perfect example that can be used for learning the students of the oldest group about two crucial principles of history studies. Our knowledge always depends on the sources available⁴. However, the historical references are never unbiased. They reflect the authors' opinion, as well as the goals they wanted to achieve by their works. For example, Aristophanes who described Socrates in the comedy had an entirely different goal than Plato who depicted him as a philosopher in his dialogues. The first one intended to entertain (and the ancient joke was not so sophisticated), while the other wanted to teach and provide knowledge. Aristophanes addressed his comedy to the wide audience, whereas Plato's dialogues aim at educated people. Perhaps knowing these circumstances, one could reconcile the contradiction of those portrayals. However, such reconciliation may

be neither possible nor convincing. History is about learning to select, make choices and constantly question the obtained results. And, last but not least, to live with the consequences of the way we think. History understood that way is the foundation of the European culture. For that reason, we can summarize the Creators' adventure with Socrates by quoting his famous saying *I know that I know nothing*. However, despite such a conclusion, one may also state that students from the Observers and the Creators groups of DUCH have learned about their limitations. Therefore, their efforts were not in vain.

Conclusions

The story of Socrates' life was chosen as a subject for this case study after thorough consideration. Socrates is a person who connects both historians and philosophers. Analyzing his biography, one may learn about many historical facts such as everyday life of Athens, great politics of the Peloponnesian War, ambiguity and contradiction of historical sources, etc. The story of Socrates' life also illustrates how important is wisdom in teaching history. And that was another reason for including his story in the program of the Children's University of Interesting History.

To summarize these considerations, one may quote the words of Leszek Kołakowski from his essay *Wielkie i małe kompleksy humanistów* (Kołakowski, 2000, p. 262). These words, although written in the mid-sixties of the 20th century, are still valid. Kołakowski presents a humanistic approach to teaching as an example of a translation project. The author compares the competences of humanists, including historians, to the translators of English, Chinese or any other language. Those latter are for him not the humanists but technicians. In Kołakowski's opinion, although they will always be needed, their role remains strictly utilitarian. A true humanist, according to Kołakowski, is a translator of cultures. Perhaps expanding a bit this metaphor, one may say that (s)he is a translator of his/her own culture into his/her contemporary language. The primary mission of the humanist is the task of maintaining social bonds that could protect societies against the technocratic threats, the tasks that allow creating values, not tools (Kołakowski, 2000, p. 262).

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⁴ Krystyna Kersten, a distinguished historian of the modern times, recalls the anecdote about Stefan Kieniewicz. It is said that when asked why in one of his books the weather descriptions end unexpectedly, he said that he did not have any more source information about the weather (Kersten, 1991). Such a level of historical accuracy (with regard both to the historian and to the ordinary users of sources) is also the goal of the Children's University of Interesting History.

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Abstract

The article presents educational activities of the Children’s University of Interesting History. The various methods that allow effective teaching of the history are analyzed. The Children’s University of Interesting History has been a part of Warsaw educational market for six years. The case study included in the paper illustrates the university’s unique methods and attitude towards students. The author analyzes different teaching methods and educational goals concerning every university group, from the youngest students – Observers and Explorers, by Travelers and Researchers up to the oldest – Creators. Such a diversified approach allows building the coherent vision of history. Teaching this vision is the basic concept of the Children’s University of Interesting History, which is also visible in practice. Referring to what Leszek Kołąkowski says, one may call such approach a translation project.

Key words: education; history; extracurricular education; teaching methods; children’s university

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LEARN MORE

KinderUni am Heidengraben

Heidengraben („pagans’ moat”) is the name given to the remains of a large Celtic fortified settlement (oppidum) dating to the Iron Age, located on the plateau of the Swabian Jura (Schwäbische Alb) in the districts of Reutlingen and Esslingen in Baden-Württemberg, Germany. The settlement was in use from about the late 2nd century BC to the early 1st century BC. By surface area, Heidengraben is the largest oppidum in all of mainland Europe.
 Source: Wikipedia.



This unusual children’s university – located in a place where history is ‘alive’ – offers the lectures on archaeology and ancient history for children aged 8 to 12.

<http://www.kinderuni-am-heidengraben.de>



Forest School – a forest playground as a remedy for nature-deficit disorder in children

Anna Komorowska*

Children need contact with nature for their proper development. This one sentence can summarize the 434-page book by Richard Louv 'The Last Child in the Woods' (Louv, 2014). The phrase 'nature-deficit disorder' that he has proposed is not an official medical term, but it became an object of discussion at conferences and in publications around the world. Based on the results of research, Louv has proved that without being in nature children show symptoms of physical and mental disorders. Simultaneously, one may observe that their opportunities to play in nature are continuously decreasing. For various reasons, parents and teachers forgo to organize trips to the forest or other wild nature places. Richard Louv and his followers have not only defined the theory of this phenomenon but also try to find adequate solutions to this escalating problem.

What is the nature-deficit disorder?

The solution that may prevent the 'nature-deficit disorder' seems very easy – it can be, for instance, a walk to the forest. However, nowadays, the simplest solution turns out to be not so simple. First of all, children do not have time for going outside. Their daily schedule is packed to capacity with lessons and additional classes. Parents are afraid that if their children just play after school, they will stay behind their peers in learning. As Carl Honoré says in the book *Pod presją* (Honoré, 2011), this 'rat race' begins in kindergarten. The only way to be free from this pressure is to realize that such race does not bring anything good. Thankfully, there are people who become aware of it. In Scandinavian countries, overloading children with excessive amounts of classes is not welcome. Children should have time to play with their families or friends after school. If parents sign them for extra classes and make them learn – the school intervenes.

Parents' anxiety is another reason preventing children to spend time in the forest. What used to be a common walk in the forest, now seems a danger-

ous trip. There are several reasons for such fear. The children may be bitten by ticks. Climbing up the trees may cause broken limbs. Sticks used for play may lead to gouging out an eye. All these are the real risks that should always be concerned. But nowadays they are so overblown that many parents are too afraid to go for a walk to the forest.

Children who spend time inside, 'glued' to the computer or a mobile screen, start to treat the natural environment as an unfriendly place, and moreover – a boring one. A short trip to the forest does not provide such intense experiences as a computer game. Besides, for older children a walk with parents may not be attractive. They need both the companions and challenges. Parents who are aware of the importance of spending time in nature, face a difficult task – how to encourage their children to go outside.

There is strength in numbers or good practices of 'Wielki Zachwył' ('Great Delight')

Barbara Zamożniewicz, the author of the 'Wielki Zachwył' blog¹, knows the problem from her experience. Even though the forest walks were common practice for her family, one day her older son has rebelled. He was reluctant when parents offered him to go outside. Meetings with other families proved to be a good solution. The boy just needed company of his peers. That led to the conclusion – meetings with other people are also more motivating for parents. When we are going to walk on our own, dropping the idea of an excursion because of bad weather or ordinary laziness is quite easy. It becomes more difficult when we have an appointment with several other families.

Richard Louv also encourages to meet in groups. His foundation 'Children&Nature Network'² has cre-

* Pracownia k.

¹ <http://wielkizachwył.pl/>

² <https://www.childrenandnature.org/>

ated the 'Nature Families' program, which promotes family nature clubs. They unite parents who want to bring up children by living close to nature. Families organize trips to the forest or park together. Thanks to that, children have company of their peers whereas parents meet people thinking in a similar way. The Foundation has published a guide *Nature Clubs for Families Tool Kit*³. It includes helpful tips concerning the organization of the club meetings such as checklists, drafts of announcements and opinions of families meeting in the clubs. The Spanish, French, and Chinese versions of the guide are also available. The work on its Polish edition is ongoing as well.

The meetings under the common name 'Wielki Zachwyt' inspire other parents and the idea began to spread out slowly. Barbara Zamożniewicz has written an article with the intent to help others to initiate similar groups in their neighborhood. She advises what is really important when planning this type of meetings. First of all, openness – inviting other, sometimes totally unknown people, we should take into consideration that they may be very different from us and therefore we should prepare ourselves to accept them. Moreover, we often realize that these differences are only apparent. Actually, their approach to life, nature, and education may be very similar to ours. The second important element is a regularity, in other words, establishing one firm date for meetings (e.g., the first Sunday of the month). And here comes another issue – consequence concerning previously made decisions. Usually, it means that we should avoid canceling the meetings without an important reason, just because of our laziness or less favorable weather conditions. A significant element that distinguishes 'Wielki Zachwyt' from other more formal initiatives is the lack of program. For people of 'Wielki Zachwyt' more important than learning is meeting and spending time together in nature. There is no guide, no teacher

or animator. Children autonomously decide what they are going to do. So, they take a large dose of 'vitamin N' (Louv, 2014) and have time to play which is quite rare in their overloaded schedules.

Walking with a guide – trips organized by the Foundation 'Dzieci w Naturę' ('Children into Nature')

However, sometimes the help of a guide (an animator) is needed. Parents may be afraid that they do not have enough competence or creativity to organize educational walks. Sometimes they are also not sure if their motivation is strong enough to encourage their children and themselves to go outside regularly. They often have no time or willingness to look for other families eager to meet and walk together. An organized event, guiding by someone who has proper competences and skills, seems to be a better solution for them.

The foundation 'Dzieci w Naturę'⁴ exists since 2018. But its founders have started family educational walks a year earlier, as part of the project 'Oswajamy przyrodę miasta i okolic'⁵ (transl. 'We tame the nature of the city and the surrounding area'), run by a Cracow organization called 'Ruch Ekologiczny św. Franciszka z Asyżu' (transl. 'Ecological Movement of St. Francis of Assisi'). The walks are organized on summer and autumn weekends to urban forests, on the fields, and wastelands – wildly overgrown places unknown even to the citizens of Cracow. One of the goals of the foundation is to show such micro-worlds that are often forgotten or overlooked, despite being close to our place of residence. When being in nature is perceived as big expedition the organization of which requires time and skills, it is highly likely, that eventually it will be abandoned. The Foundation offers micro-trips, i.e.,

Figure 1. 'Great Delight' of mud



Source: Author's own materials.

³ https://www.childrenandnature.org/wp-content/uploads/2015/04/NCFF_En_2014.pdf

⁴ <http://www.dzieciwnature.pl/>

⁵ <https://www.swietostworzenia.pl/nasze-dzialania/przyroda-miasta>

short walks – lasting two or three hours – to places located in Cracow, which can be reached by public transport.

During these walks, the participants may observe plants, animals, or insects and the guide describes them in a place they are at a given moment. Because nature is changing all the time, the same area looks entirely different in spring than after the first frost. Thanks to this considerable diversity of nature, the same places can be discovered all over again. These walks usually end with a picnic. Their integrating role both for children and adults is significant. Even more, having time for eating and resting before coming back home is also a good idea.

It is worth to notice, that although there is a person who conducts the walks, they should not resemble extracurricular classes. If children are more willing to play in a stream than listen to the guide, they can do it freely. According to the Foundation, making children attentive may have an adverse effect. Following the explanations could be valuable only when a child is interested in it. Sometimes, it is enough that parents listen to the descriptions, learning this way a lot. They can transfer this knowledge to their children later on when they are ready for it.

Scott D. Sampson in the book *Kalosz pełne kijanek. Jak dzięki rozwijaniu miłości do przyrody wychować kreatywne, odważne i odpowiedzialne dziecko* (the original title: *How to Raise a Wild Child: The Art and Science of Falling in Love with Nature*) emphasizes that the primary goal of educators and teachers is not sharing knowledge but implanting the deep longing for nature (Sampson, 2016, p. 306). Only people who experience nature can love it and only those who love nature can defend it. Children who learn about nature from books and know about the savannas more than about the nearest forest would not defend the Białowieża Forest.

A School in the forest – homeschooling education proposed by ‘Szkola Bosych Stóp’ (‘Nature Based Education’)

Izabela Stefanowska has made similar assumption initiating meetings called ‘Szkola Bosych Stóp’⁶. She lives with her family in a village Koszarawa, close to the forest. Her children use to spend most of their time outside. They play jumping in the stream, balancing on the ropes stretched between the trees, cooking in the ‘mud kitchen’ or molding shapes out of the clay. Sometimes they even spend the night outside in ‘the base,’ build by them from sticks and fabrics. Izabela Stefanowska also invites other families to spend time in that way.

What is ‘Szkola Bosych Stóp’? Those are open meetings for families who decide not to send their children to the traditional school but choose to homeschool instead. However, in this case, despite the name, homeschooling is mostly not done at home. The forest becomes both a place and an inspiration to learn. Playing in the forest supports children in acquiring knowledge not only about nature but also about mathematics, art, and foreign languages, not to mention physical education.

Each meeting of the ‘Szkola Bosych Stóp’ has its leading theme. All participants are expected to prepare their own materials referred to that subject. In that way, children can learn from one another as well as from parents. Children and parents learn by playing games, building models, sewing the costumes, constructing bases, walking in a forest or creating pieces of art using natural materials, available in the forest. There is also time for play. Children decide themselves whether they want to participate in workshops or just play. Izabela Stefanowska is convinced that children listen and learn, even if they seem to be

Figure 2. A micro-trip



Source: Author’s own materials.

⁶ <http://szkolabosychstop.pl>

preoccupied with something else. When they once 'catch the bug,' they want to learn more and ask for additional information. The library of her children, filled with books about nature, is a good illustration of this statement. Her children reach for them very often to check the name of an unknown shrub or bird that they have seen during the day.

'Szkola Bosych Stóp' also organizes so-called 'teatime with English.' A walk in the forest ends with a short picnic. During this walk, all participants should speak or at least try to speak English. Such conversation gives an opportunity to practice English and to assimilate new words used in everyday situations. The initiators of those meetings believe that children will have enough time to learn grammar and Shakespeare later.

Figure 3. 'Szkola Bosych Stóp'



Source: Author's own materials.

The charm of a story and getting acquainted with nature according to 'Pracownia Edukacji Żywej' ('Laboratory of Living Education')

Bogdan Ogrodnik and Maja Głowacka the creators of the foundation 'Pracownia Edukacji Żywej',⁷ went a step further. They also invite families to the forest. However, they suggest spending there not only a few hours but a few days. Initially, the foundation has organized workshops for schools and kindergartens as well as walks for families. Currently, it offers short trips as a part of the 'Kręgi Leśnych Rodzin' (The Circle of Woods Family) initiative. During the school year there are weekend meetings, and during school holidays – week-long expeditions. The families live in agri-tourism accommodations. Such an approach helps not only go outside but also spend short holidays in nature.

Usually, the organizers who are the educators as well choose one story for a few-day workshop. They look for inspiration in the neighboring forest, then decide on a theme, and all the workshop activities are aligned with it. Every morning, children listen to a fragment of the story and then perform tasks related to it. The participants of the workshops spend most of the day in the forest – wandering or acting in the 'base' made especially for them. They spend time observing the animals – what habits they have, what are their traces, and tracks. Families collect plants to their herbariums or take photos of those which they could not identify. And then, in the afternoon

they study and systematize specimens collected during the trip. For this purpose, they can use keys for plants and animals' identification and watch the collected specimens under the microscope. Moreover, they can create their own 'books' containing compiled and systematized information and findings.

The creators of workshops believe that equally important as learning in nature is entertaining in nature. Therefore, during such meetings, there is always time and opportunity to play. Depending on the season, children have plenty of different activities to choose from. They can climb trees using a climbing harness. They can play splash in the stream. They can pick blackberries or other wild fruits and make bonfires.

Figure 4. The Circle of Woods Family in Summer



Source: Author's own materials.

⁷ <http://pez.org.pl/>

Forest School – a forest playground...

And in winter, they can sled or make a snowman. The most important thing is that they have fun spending time in nature. Thanks to that, they can develop a natural curiosity of the world, which is crucial to learn effectively. As the founders of 'Pracownia Edukacji Żywej' emphasize – the relations are more important than knowledge.

Nature and playing – natural playgrounds

The aforementioned initiatives should be strongly recommended for families as excellent ideas of spending time together. However, one trip a year, of walking in the forest or trekking in the mountains, is not enough for children to fall in love with nature. The 'micro-trips' or meetings of 'woods families' are not organized everywhere. The difficulties that face parents wanting to give their children an opportunity of being in nature have already been mentioned. Is there any other way to make this task easier for them? Natural playgrounds can be somehow the intermediate solution. They are play areas carefully designed in such a way that natural elements preponderate. Plants or their parts are the primary building materials in the well-designed natural playground. Those are not ornamental plants with solely decorative purpose but integral parts of that place providing space and materials for play. An obstacle course made of boulders or cut trunks of a tree as well as the wicker tunnel are simple examples of playground area built using plants (living or non-living). On the other hand, playing by making 'acorn soup' in a 'mud kitchen' is a great illustration of the use of fruit, flowers,

and seeds. It is worth noting as well, that those simple solutions used on natural playgrounds (e.g., slides on the slopes of the hills and ropes spread between poles) could be better tools for practicing balance by climbing and swinging than more sophisticated, and not always aesthetic constructions on traditional playgrounds. The playground's cushioned surface can also be natural and made of materials such as sand, gravel and wood chips. The whole construction creates natural space which is entirely safe and complies with standards established for playgrounds.

Natural playgrounds can to some extent substitute the natural environment. They can easily be situated in the city centers, school, and pre-school gardens or residential areas. Such solution gives parents a sense of security. Children do not meet dangerous animals what is theoretically possible in the forest, but simultaneously they have an opportunity to observe the nature (e.g., insects attracted by flowering plants growing on the playground). Loose elements, such as sticks and stones, stimulate children imagination. They allow rearranging the space according to the children ideas, for instance, by building a base or a shelter. Such games let parents see both that their children have great fun playing with such simple 'toys' and that they are perfectly safe doing it. It is worth to mention that European standard PN-EN 1176⁸ regulates the playground safety and it is possible to design all elements of a natural playground to comply with that standard.

It should be emphasized, however, that even the most natural playground cannot replace the natural

Figure 5. Natural playground in Berlin



Source: Author's own materials.

⁸ This standard is not mandatory, but the land administrator is obliged to ensure safety on the playground. In practice, the standard is treated as *technical knowledge, according to which playgrounds should be designed and build.* (<http://placezabaw.org/info/nadzor-budowlany/32-place-zabaw-ministerstwo-infrastruktury>)

environment but may become a good starting point for the 'wilder' trips. Spending time on a natural playground can help parents to understand that getting the child's clothing muddy is not so much important when compared with the value of enjoying nature. It may also convince them that playing with sticks or climbing trees and boulders does not have to be dangerous. On the other hand, children 'engulfed' by virtual reality have an opportunity to discover that the real world around them may also be fascinating.

Let us go, play and learn in the forest – final remarks

It is worth to notice that the presented initiatives base on the concept of personal contact with nature. Their founders emphasize that both knowledge and love of natural environment begin with and rely on a deep relationship with it. All actions described in this article, aimed at encouraging to establish this relationship are straightforward – walks, workshops

and family meetings. To organize them one does not need a lot of money or well-developed planning skills. However, three elements are essential: allowing children being with nature, giving them enough time to familiarize with the natural surrounding and keeping the balance between education and play.

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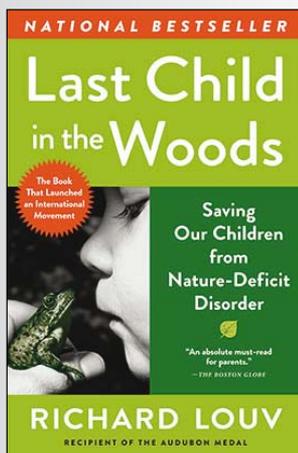
Abstract

Researchers alert – children spend less and less time being in nature, which has a detrimental effect on their physical and mental health. As the response to these appeals, such foundations as 'Dzieci w Naturę' or 'Pracownia Edukacji Żywej,' as well as private initiatives like 'Wielki Zachwył' or 'Szkoła Bosych Stóp' appeared. They organize workshops, family walks and trips to the forest giving children an opportunity to play in nature. Natural playgrounds can be an addition to those activities, which in a way 'bring' nature into the cities, residential areas, schools, and kindergartens. In this article, the author presents various examples of good practices that allow children to play in nature.

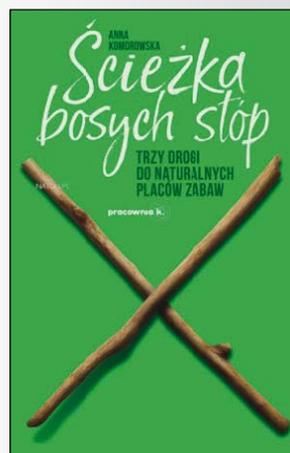
Key words: environmental education; nature-deficit disorder; a natural playground; education

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e-mentor

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02-554 Warsaw, Poland, tel./fax: +48 22 646 61 42
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Integration of the children's universities community in Poland

■ Children's Universities Congress

Every year since 2014 people engaged in the activities of children's universities in Poland gather to discuss the broad spectrum of issues related to this form of education offered to the youngest learners. Topics cover didactic means and methods, effective use of technology as well as some organizational aspects.

The concept behind the Congress is to establish the common space for sharing experiences and collaborating on the solutions to the challenges that children's universities face nowadays. It is also the place and the time when leaders of children's universities can present their achievements, examples of successful participation in national and international projects, and many more.

■ Association of Children's Universities

The Congress meetings also became the inspiration for the leaders of children's universities in Poland to create a common platform that would support sharing passions and joining the efforts on further development of this type of non-formal education. During the I Congress of Children's Universities, its participants agreed on the necessity to join the efforts and to create the organization that would provide the space for collaboration and exchanging the ideas. In 2015 the Association was established and officially registered.

The representatives of the universities, NGOs or any other institutions organizing classes for children and youth within the scope of children university are welcome to join the Association.

People interested in collaboration may reach us contacting the 'E-mentor' editors office at redakcja@e-mentor.edu.pl

