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EDUCATIONAL ASSESSMENT OF CITY OBJECTS AND FACILITIES

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Abstract

The article poses the problem of educational assessment of city objects and facilities by educators to select and incorporate a variety of urban resources in education and to provide teachers and heads of educational organizations with tools to make necessary organizational and teaching decisions. As a result of the analysis of various learning space assessment scales, a survey and interviews with Moscow teachers, the authors have developed an assessment model that consists of three criteria for evaluating city objects and facilities. These criteria include safety, accessibility and educational potential. Each criterion is characterized by several indicators: physical, psychological and informational safety, organizational, collaboration, psychological and educational, regulatory, physical, visiting, and financial accessibility, as well as educational value, adequacy of an object or facility to teaching objectives, uniqueness and effectiveness. The suggested assessment tool was tested in the teaching community of Moscow in the form of workshops on the educational assessment of city objects and facilities, supplemented by an expert discussion. As a result, we obtained data on the practical applicability of the educational assessment of city objects and facilities model and got better understanding of how primary and secondary school teachers can select city objects and facilities to use teaching and to expand the range of city resources they use.

Keywords: City, educational urban studies, educational assessment, city objects and facilities, city educational resources

1. Introduction

1.1. Educational urban studies - a new area of pedagogical research

The city as a subject of scientific research has been traditionally studied by geography, sociology, history and anthropology. In the second half of the 19th century, urban studies emerged as a discipline that studies cities. However, even as a habitat of a significant part of population, a city for a long time wasn't part of school education. For example, in the course on Geography in Russian schools, the city is studied only in the sections about the location of the population, in the course on History there are topics devoted to ancient and medieval cities. Thus, properties and features of the exact environment, where school students live, are not studied at school.

However, the possibility and necessity of including the urban environment in the educational agenda has lately become the subject of educational research and design. The urban environment can be used for the educational process on several levels. Educational organizations form networks with each other as well as with the local enterprises to create opportunities for a decentralized educational program. We find similar experience in the practice of British and American schools collaborating with museums and libraries (Cabala & Grzelak, 2020; McGregor, 2016; Shelby, 2021).

Secondly, the urban environment can become both a subject of study and a stage for the educational process. This approach is called place-based learning (Cueva-Ortiz & Cruz-Cárdenas, 2021; Langran & DeWitt, 2020; Macdonald, 2020). It is a type of project-based learning in which students observe real problems of urban life, mastering the content of the general education curriculum. The result of such learning is real projects of school pupils, which are distributed to citizens through different kinds of media, city facilities and events. Smith (2002) identified five thematic models of place-based learning that can be adapted to different contexts: (a) cultural studies, (b) nature studies, (c) real-world problem solving, (d) internships and entrepreneurial opportunities, and (e) introduction to social processes. It is also important to mention the work of Ron Dvir and Pasher, 2004, who put forward the concepts of "Knowledge City" and " Knowledge Moments," which can happen in any urban location where citizens interact, as well as his many followers (Edvinsson, 2017; Hu, 2020).

The implementation of these approaches requires, of course, not only teaching guidelines and theoretical bases, but also specific tools for selecting city facilities and objects that could be used in education. We see it as one of the objectives of Educational Urban Studies, which collects data on city facilities and objects from different fields of knowledge and emphasizes what is important for an educator to consider in their educational design work.

The relevance of using the urban environment in education is shown in our works on the implementation of urban resources in education (Asonova & Rossinskaya, 2017; Asonova et al., 2018; Asonova & Rossinskaya, 2018; Asonova et al., 2020; Asonova et al., 2021). Our 2021 study (Asonova et al., in press) found that 97% of Moscow teachers use city objects and facilities in teaching. The ways of using the city in teaching range from visiting excursions to developing student assignments to be done in the city environment and using city resources for self-education. The increasing involvement of the urban environment in the educational process presents teachers with the challenge of assessing and selecting city resources according to teaching objectives and students' learning needs.

1.2. Tools for assessing educational environment

Assessment of school as learning space has been studied in detail (Ivanova & Mayakova, 2017; Ivanova & Vinogradova, 2017a; Ivanova & Vinogradova, 2017b; Ivanova et al., 2019). Environment Rating Scale series (ITERS, ECERS, SACERS, FCCERS), PAS scale, CLASS, Ofsted, LEEP, and Clever Classrooms scales are used for this purpose. The Environment Rating Scale (Harms et al., 2013; Harms et al., 2016) is used to assess the quality of the educational environment at various educational levels from preschool to high school and in family learning settings. They present a system of indicators and measures broken down into seven scales: interior space and furnishings, health and safety, activity/occupation, interaction, learning process, and special needs. Assessment is based on observation during the school day, interviews with staff, and review of documentation.

As a result of the increased interest in engaging urban environment in education, both from individual teachers and school administration, developing tools for its assessment has become necessary. Furthermore, during at the stage of preliminary inventory of elements of urban environment with the potential for inclusion in educational agenda, it becomes obvious that it is necessary to assess both facilities and institutions traditionally recognized as educational, and those facilities that are usually not considered a part of city educational infrastructure. Events, both educational and entertaining, social, cultural, political, etc., should also be included in this list.

The first attempt to create such a tool was the Scale of assessment of socio-cultural educational interactive practices (Asonova et al., 2017). It includes two sections – the Assessment Scale of a space where socio-cultural learning activities take place and the Assessment Scale of methods and content of learning activities. Each scale is divided into indicators and measures. They are used to assess and self-audit educational practices in libraries, museums and other urban spaces in order to improve their quality.

1.3. Subjects of assessment

The research is based on the understanding of the urban environment, city-owned premises and urban resources in the context of Educational Urban Studies. Urban environment can be interpreted in two ways - as a set of physical conditions and as the human environment. Interpreting this approach in the educational context, we, firstly, following Porozov (2012) consider the urban environment as a system, consisting of three levels. The meso- and micro-levels are the most relevant for the study of educational potential. It is especially important to take into account the second meaning and consider the urban environment as a set of city-dwellers' activity-based practices including educational ones.

In urban planning, city objects and facilities are classified according to their functions, ownership and management. These attributes determine the programmability of the object in terms of its educational potential for citizens. A city object becomes educational when a citizen realizes its educational value, using it for their formal, informal and non-formal learning practices. Educational potential is determined not only by the resources of the object itself, but also by the resources of the person using it. Teachers who possess tools and methods for assessing the educational potential of a city object can become guides to the discovery of educational potential of a city and organizers of urban learning practices.

2.   Problem Statement

Thus, the interest of educators in the city educational resources generates the demand for the development of tools that will help assess the possibility of using certain resources, select and group resources considering various factors and develop effective ways for their effective use. The variety of city facilities and objects, the complex nature of many of them, not always obvious management affiliation and other features become an obstacle to the inclusion of urban environment in education. The mentioned features of urban environment also make it impossible to create universal and long-term teaching materials for the use of city objects and facilities, as, for example, educational designers and teachers did in the "Lesson in the City" project (MMC ED, n.d.). The variability of urban space and the scale of the metropolis determine the need to develop unique ways to incorporate the urban environment into the educational process for each school, each teacher, and even each grade. Teachers need a tool to help them assess urban resources and develop approaches to their use. Such a tool could be realized as an urban resource assessment scale, developed with reference to existing educational environment assessment scales.

3.   Research Questions

The focus of this research is to develop and describe the tool of pedagogical assessment of the urban environment. The research should answer the following questions:
- What characteristics of a city object or facility are important for educators in making decisions about the feasibility of using this object or facility in education?
- What characteristics of a city object and facility are important for educators when making teaching decisions related to its inclusion in teaching?

4.   Purpose of the Study

The purpose of the study is to develop a user-friendly tool for educators to assess city objects and facilities that will promote using its various elements in the learning process.

In order to achieve this objective, it is necessary to identify the assessment criteria, describe them, define indicators for each criterion, as well as to test whether the proposed tool meets teachers' needs.

5.   Research Methods

In order to conduct the research, methods of surveying, interviewing, analysis, modeling and testing of the results of the study were used.

5.1. Data collection: analysis, interview and questionnaire

The first stage of the research included an analysis of the available scales for assessing the educational environment and socio-cultural educational practices and the experience of their use (Asonova & Rossinskaya, 2017; Asonova & Rossinskaya, 2018; Ivanova & Vinogradova, 2017a; Ivanova

& Vinogradova, 2017b; Ivanova & Vinogradova, 2018). It showed that the scales are a convenient tool for assessing complex environments and allow taking into account various factors.

Also in the first phase of the research, 16 teachers were interviewed and 327 Moscow teachers took part in the survey about city objects and facilities they use in their teaching practice (Asonova et al., in press). The analysis of the interviews and survey showed that teachers are quite independent in using urban environment for professional purposes. Increasingly, they take it upon themselves to find facilities to visit, conduct their own excursions and give individual assignments to be done in the city. Also teachers use a variety of urban resources in teaching, among which museums, libraries and parks prevail. However, it was noted that the variety of city facilities and objects visited is not very high compared to their total available number.

5.2. Modeling a pedagogical assessment tool

The results of the analysis of the scales, survey, and interviews formed the basis for modeling the educational assessment of urban resources. Three main criteria were identified - safety, accessibility, and educational potential. Indicators were also identified through modeling based on educational and psychological research analysis, participant observation of teaching practices and subsequent testing through discussion with teachers of Moscow schools at professional development courses and conferences.

5.3. Testing the Educational assessment of city objects and facilities model

The assessment model was tested during practical learning sessions for different groups of educators (undergraduate and graduate students and participants of professional development courses), where participants used the suggested developed Educational assessment of city objects and facilities model and discussed the ways of its application.

6. Findings

6.1. Educational potential assessment of urban resources

The analysis of learning space assessment scales, the results of the survey and interviews with teachers helped us to develop a model of educational assessment of city places and facilities, which includes three criteria: safety, accessibility, educational potential. Each criterion includes several indicators: safety is assessed according to three indicators, accessibility is assessed according to seven indicators, educational potential is assessed according to four indicators. Before starting the assessment, a teacher selects the most relevant criteria for a particular teaching situation from the following list:

Criterion 1. Safety:

1.1. Physical safety.

1.2. Psychological safety.

1.3. Information safety.

Criterion 2. Accessibility:

2.1. Physical accessibility.

2.2. Regulatory accessibility.

2.3. Psychological and educational accessibility.

2.4. Organizational accessibility.

2.5. Collaboration accessibility.

2.6. Financial accessibility.

2.7. Visiting accessibility.

Criterion 3. Educational potential:

3.1. Educational value.

3.2. Efficiency (justifiability of usage).

3.3. Uniqueness.

3.4. Adequacy to teaching goals and objectives.

6.2. "Safety" assessment criterion

"Safety" criterion includes three indicators: physical safety, psychological safety and information safety. Generally, safety is "a system of guarantees ensuring sustainable development and protection against internal and external threats" (Baeva, 2002, p. 54). Accordingly, physical safety of city objects and facilities means that they do not have attributes that can cause physical harm (harm to health) to a person when interacting with them, the absence of natural or man-made risks. In assessing physical safety, it is necessary to pay attention, firstly, to how safe is the way to the object or facility. For example, if a monument is located in the center of a square with busy traffic, the way to this object constitutes danger for students' life and health. It is also necessary to pay attention to how safe the facility or object itself is (for example, whether it is firmly installed, what materials it is made of, whether there are elements that can course harm) and to correlate these characteristics with the age of students. For example, the presence of a large number of closely placed glass windows in a museum can be dangerous for lively elementary school pupils.

Psychological safety of learning spaces is also thoroughly discussed by Baeva (2002) in her work "Psychological Safety in Education" (Baeva, 2002). She defines psychological safety as "the state of learning spaces, free from manifestations of psychological violence in interaction, contributing to the satisfaction of needs for personal and trustful communication, creating referential value of the environment and ensuring mental health of the participants included in it" (Baeva, 2002, p. 83). In other words, psychologically safe place can also be called a psychologically comfortable one. In characterizing comfortable psychological state, Niyazbaeva (2009) refers to its main components as follows: stable mood, positive feelings and emotions, positive experience, a stable high physical tone. Together they have a positive effect on human activity, including cognitive activity. Thus, a psychologically safe city object or facility is the one where there is no potential danger of conflicts, where a school pupil will feel calm and protected. Psychologically safe objects produce trust and positive emotions. Psychological safety is provided by intuitive or planned comprehensibility of the object or facility (for example, availability of clearly visible and easy to understand signs or voiced instructions and rules, etc.), friendliness of staff, their readiness to communicate with school pupils and other factors.

Information safety is usually described as measures to preserve and protect information, including personal data. The term "protection from undesirable information" is also actively used in the interpretation of the Federal Law "On Protecting Children from Information Harmful to Their Health and Development" dated 29.12.2010 No 436, where children's information safety is interpreted as "a state of safety for children when there is no risk connected with information causing harm to their health and (or) physical, mental, spiritual, moral development" (Article 2) (Official Internet portal of legal information, 2010). When assessing a city object or facility, it is worth paying attention to both aspects. First, it is important to make sure that the organization which collects personal data from visitors is authorized to collect and store it. Second, it must be ensured that the facility does not provide knowingly false information, information that may harm children (in accordance with the Federal Law No 436) or information falling under the Federal Law "On counteracting extremist activities" dated 25.07.2002 No 114-FZ (Official Internet portal of legal information, 2010).

6.3. "Accessibility" assessment criterion.

"Accessibility" assessment criterion includes such indicators as physical accessibility, regulatory accessibility and psychological and teaching accessibility.

Accessibility is usually discussed in connection to "Accessible Environment" state program, which takes into account the needs of persons with disabilities and other immobile groups (for example, the elderly, pregnant women, people with strollers or small children, etc.). It seems that in relation to educational assessment of city objects and facilities, accessibility can be considered more broadly. According to State Standard GOST R 58178-2018 "Preservation of Cultural Heritage Objects. Accessibility of cultural heritage objects for people with limited mobility" (Rosstandart, 2019), the accessibility of cultural heritage objects is defined as "integrated specifications of a cultural heritage object, taking into account safety, informativeness, comfort, which includes a set of: architectural and planning, construction, engineering and ergonomic solutions to ensure physical accessibility of the territory, buildings (structures, constructions, premises) for the disabled and other limited mobility people; organizational measures to ensure and form mechanisms for providing qualified situational assistance to people with disabilities of various nosology by object staff; solutions to ensure accessibility of information, museum, exhibition, display and other services for people with disabilities of various nosology; organizational and technical solutions aimed at preventing risks and responding to emergencies". (Rosstandart, 2019). This definition can be extrapolated to other city facilities (educational, cultural, infrastructural, etc.). The accessibility of facilities is relevant not only for people commonly referred to as people with limited mobility, but also for school pupils, both primary and secondary school students, regardless of whether they visit the facility individually or with a group, alone or accompanied by adults.

In most general terms, physical accessibility should be understood as the ability to approach a facility or visit it, to interact with it if necessary, when it is implied by its functions.

Regulatory accessibility - is the possibility to visit or observe a city object or facility, without violating regulatory documents of both an educational organization and the object or facility that students are going to visit. A teacher should request and study these documents in advance, because their

requirements must be taken into account when organizing the visit to avoid the imposition of liability for violation of rules and retaliatory measures by parents, administration or other participants.

Psychological and educational accessibility is seen as how information provided by a city facility or object and the forms and ways of interaction it suggests correlate with age and level of educational of students. For example, in assessing the psychological and teaching accessibility of a local history info-board for third-grade students a teacher should analyze the complexity of the text (the presence of unfamiliar vocabulary), font size, height of the text, etc.

Organizational accessibility reflects how difficult it is to organize a visit to a city facility or object. A teacher should find answers to the questions: Does the facility have an operator to agree on a visit? Does the operator offer its own programs - excursions, workshops? Is it possible to visit according to one's own program?

Collaboration accessibility ensures the opportunity for a teacher to conduct a dialogue with a facility to arrange a visit. According to this criterion accessible facilities provide publicly available information necessary for visitors – their address, working hours, visiting rules, and staff contacts responsible for organizing visits. Collaboration accessibility also means readiness of the facility to communicate with teachers, to discuss the possibility not only to book an excursion or a workshop for a certain time, but also to discuss their content, adjust it to a teacher's needs, as well as the readiness to give a teacher the opportunity to conduct a lesson or excursion themselves.

Financial accessibility means that the cost of visiting a facility is affordable for the students' families. When examining financial accessibility, it is necessary to pay attention to the cost of tickets, excursions, classes or other learning events, discounts and special conditions (for example, how many adults can accompany a group for free).

Visiting accessibility shows whether it is possible to visit a facility at a time that is convenient for a teacher and their students. In order to assess visiting accessibility, a teacher should get information about working hours / days of a city facilities and assess them according to the school schedule.

6.4. "Educational potential" assessment criterion

The first two criteria, safety and accessibility, can be considered organizational. The third criterion, "Educational potential", helps to assess the city facility or object through teaching scope. First of all, it is important to determine how well the facility meets teaching goals and tasks in a particular learning situation. Can these tasks be fully or partially accomplished only by using the facility? Do additional resources need to be brought in? Are there other facilities that can help to accomplish these tasks more effectively? Is the facility unique or typical? If it is typical, are there other similar facilities, that are more accessible and usable? A teacher can address all these questions by assessing the facility using educational potential indicators.

The "Educational value" indicator shows what can be the educational results of visiting a city object or facility, what school students can learn, what knowledge and skills can be mastered there, what subject, meta-subject and personal results can be obtained. The effectiveness of a city facility or object in terms of using it for teaching lies in the justifiability of its use. In assessing the effectiveness of a city facility or object from a curricular point of view, a teacher should determine how much time, resources,

and effort it will take to visit and work with a city facility or object and whether similar teaching objectives can be accomplished without leaving the classroom.

The uniqueness/typicality of a city object or facility is determined by comparing teaching objectives that can be accomplished by engaging with it or with other similar objects or facilities. It is necessary to answer the questions, does the facility have analogs? What are its advantages compared to analogs? Can these teaching objectives be accomplished with the help of other facilities that are more accessible to visitors?

The indicator of the adequacy of the facility to the goals and tasks of a learning practice is one of the most important. It helps to assess how likely and realistic it is to achieve teaching objectives with the help of an assessed facility or object.

6.5. Testing of the assessment model in the pedagogical community

Educational assessment of city objects and facilities model was tested at the learning sessions of MCU postgraduate programs and during a panel discussion at the "Collaboration in Education, Management, and Business" Conference (10 April 2021, Moscow).

At the learning sessions, which were held in an urban environment in Hermitage Park (Moscow), graduate students were asked to come up with and describe a teaching objective, i.e. to name the target audience (age, learning situation), teaching conditions, and expected educational outcomes. Students then exchanged tasks and described several objects in the park according to assessment criteria. When assessing safety and accessibility, they relied on the given conditions (descriptions of students, their educational context), and when assessing educational potential they relied on the assigned teaching objective. In the course of their work, the graduate students were given the opportunity to determine the form of assessment themselves. The graduate students proposed three forms: a table with marks of availability and non-availability, a brief description, a detailed description. During the discussion the graduate students noted that the wording of the criteria and indicators is clear, the set of criteria and indicators is sufficient to make organizational and teaching decisions on the use of an object or a facility.

During the panel discussion at the "Creativity in Education, Management and Business" conference (2021), the proposed structure of educational assessment of city objects and facilities model was also approved by teachers, head masters and instructional designers.

7. Conclusion

7.1. Criteria for assessing city and facilities

The research showed that to make organizational and teaching decisions about the possibility of using city objects and facilities in teaching it is necessary to conduct a qualitative assessment of it according to three criteria: safety, accessibility and educational potential. When evaluating a facility according to the criterion of safety, it is necessary to describe its physical, psychological and information safety. The criterion of accessibility includes indicators of physical, regulatory, psychological and teaching, information, collaboration, visiting, organizational and financial accessibility. These two criteria help to make organizational decisions. Teaching decisions are determined by assessing the educational

potential according to the indicators: educational value, effectiveness, uniqueness, and adequacy to teaching objectives.

7.2. Prospects for using the educational assessment of city objects and facilities model

Testing the educational assessment of city objects and facilities model in different audiences of teachers and education stake-holders showed that the model we developed allows to adequately assess educational potential of city objects and facilities and make organizational and teaching decisions about the possibility of using them in education. An important result was also that the majority of teachers admitted that the assessment model helps to reveal the educational resources of the urban environment, focuses the teacher's attention on them.

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