“Pop-Up Systems”—Innovative Sport and Exercise-Oriented Offerings for Promoting Physical Activity in All-Day Schools

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Abstract: In all-day schools and schools with extended education, children have the opportunity to spend the whole day at school. Full-day attendance at school requires a reorientation of extended time. Therefore, it is important to consider how children spend their time between lessons and identify conducive opportunities. As part of the project “Sport in the School Environment”, multiple mobile pop-up facilities were installed at several all-day schools in Zurich, Switzerland, for a period of 3–6 weeks. These facilities included “Parkour”, “Pumptrack”, “Skatepark”, and “Streetsoccer”. The aim was to find out whether these installations offer an opportunity for physical activity (PA). At the same time, social aspects of the students using these facilities as part of their all-day school attendance were observed. The following questions were investigated: How, by whom, and in which contexts are the installations used? The use of the facilities was evaluated content-analytically and descriptively. It was shown that the facilities are used intensively and in very different ways. The main focus of the pop-up facilities is on the use of the facilities and the creation of opportunities for children and young people to exercise and meet up with each other.

Keywords: all-day schools; extended education; physical activity (PA) and exercise opportunities; pop-up facilities

1. Introduction

Parallel to the development of all-day schools in Germany, all-day schools are being introduced in Switzerland, especially in urban areas. This leads to children and adolescents’ being able to spend more time at school, during lunchtime and after lessons in the afternoon. The more structured everyday life of adolescents is regarded as expanding the public mandate of extended education [1,2]. Furthermore, the global problem of inactivity among children and adolescents is recognized by scholars as an increasing school-related responsibility for fostering physical exercise and movement in children and adolescents as they grow up [3,4].

With regard to school-related physical activities, extended educational sports activities become more important in all-day schools [5]. These activities include supervised sports classes after lessons, unsupervised opportunities during lunchtime, and free physical activities during recess, as well as before and after lessons. New types of PA and sports opportunities are presented to the students. Among other things, these opportunities enable a movement-oriented rhythmization of the school day and connect the students to their living environment [3] (p. 437).

Extended educational sports programs are located at the interface between curricular physical education and club training. They occupy a position between formal, non-formal, and informal learning opportunities and between care time and education [6]. Thus, they characterize a new field of learning and encounters that are neither compulsory instruction nor recreational or sports clubs. Furthermore, they provide infrastructure for students to...
link their school experiences with their living environment through PA. The opportunities offered include playful engagement with movement, competitive events, and training, as well as recreation and social learning [7].

All-day schools have the potential to organize PA and exercise for children and adolescents [4]. Additionally, they enable school administrators to link school-based with out-of-school learning opportunities. In this article, we focus on unaccompanied PA and exercise opportunities that are temporarily made available for free use on school grounds in the shape of pop-up facilities. The primary aim in doing so is to show how and when these facilities are used by which students. The underlying objective is to provide integrated health promotion, including daily opportunities for exercise that set the rhythm for the school day [8] and which all children should achieve, regardless of their gender and their socioeconomic status [9].

2. “Sport in the School Environment”, a School Development in Urban Switzerland

A schoolyard is a specific form of free space for children and adolescents. It is a space where they can receive partially unsupervised extended education as well as spend leisure time. This space and the available infrastructure have different functions which serve as a contrast to the time that is reserved for instruction and regulated by adults cf. [10]. The schoolyard is an active place “of movement and recreation” [11] (p. 575). Breaks and the schoolyard serve to structure curricular and free time. They provide opportunities for relaxation and peer-led interaction. It is a place of free play, movement, and social action. The arranged infrastructure serves to expand the ability to act and is therefore even more significant for children at all-day schools, who spend more time at school cf. [12].

The implementation of an all-day school at elementary schools and the broad introduction of all-day schools involved considerations and concretizations regarding the expansion of extended educational opportunities as non-formal and informal learning environments. This increased the importance of designing extended space and time in terms of structure, processes, and goals. Extended care hours opened new possibilities for the design and provision of supervised, non-instructional time. Sports and movement were to be central elements in the design of the extended school day, along with other cultural and aesthetic educational engagements.

A wide range of factors influence PA in general terms. The family context certainly plays a key role in early childhood, however, as the family is generally the first and initially the only field of action for children [13]. Children are offered more or less opportunities for sport-related experience to shape their sporting activity, depending on the socio-cultural background of their parents and their understanding of education. Numerous studies on children’s PA confirm that children and adolescents from households with lower socioeconomic status are less likely to be physically active than their peers with a higher socioeconomic status [14–17]. With regard to migration background, knowledge of the parents’ native language and country of origin is also absolutely necessary, as sport has a different status in different countries and their particular cultures and traditions.

Children with a migration background can, of course, not be viewed as a socially homogeneous group and their situation cannot be generalized in all respects. However, sports participation is generally lower among children with a migration background than among those without a migration background [18].

The project “Sport im Lebensraum Schule” (Sports in the School Environment), supported by the Federal Office of Sport (BASPO, Bundesamt für Sport), has the goal of developing, implementing, and evaluating exercise-oriented extended educational opportunities at 14 pilot public schools in Zurich. These schools implemented extended educational opportunities before and after lessons in the 2019/20 school year, as they were the first ones to be called all-day schools. These urban public schools are located in different and diverse neighborhoods in the city of Zurich. Their principals agreed to try out the suggested PA activities for two years.
Four extended educational elements were implemented: 1. The organization of an open gym (low-threshold PA and exercise opportunities that children could use flexibly and without registration) during lunchtime; 2. supervised sports classes (poly-sportive and discipline-specific sports courses that were attended throughout the school year) in the late afternoon after lessons ended (at approximately 3:30–4:30 p.m.); 3. the design of physical activities and exercise programs before and after classes and during recess; and 4. the temporary installation of four different pop-up facilities for free use (referred to herein as “pop-ups”, including “Parkour”, “Pumptrack”, “Skatepark”, and “Streetsoccer”). Lessons at Swiss public schools are generally held from 8 a.m. to 12 noon and from 2 to 4 p.m. Care time before and after the lessons and during lunchtime must be organized and paid for by the families. Only at all-day schools are these times offered upon request.

Through the design of the schoolyard and the placement of pop-ups in the schoolyard, all-day school and leisure time structurally overlap. This creates non-formal and informal learning opportunities that provide a space for interdisciplinary and subject-specific learning. Thus, the pop-ups in the schoolyard represent a space for non-immediate educational processes, which provides the opportunity to harmonize and align the school with extended educational places and processes [10].

The objective of the integrative synthesis of education and leisure at all-day schools can be assessed through the pop-ups in the schoolyard. The effectiveness of these pop-ups is theoretically based on a service utilization model [19]. The central message of this model is that teaching does not simply have a direct influence on the students, but rather that a teacher can only offer learning opportunities that can be used by the students and lead to the desired effects [20]. Learning is understood here as an active, self-directed, and individual process that can vary depending on a willingness to make an effort, learning strategy, and curricular and extracurricular learning activities. The effects are thus based on the use of learning opportunities and are related to the individual learning conditions of the students, such as motivation and cognitive learning potential, as well as motor learning potential, in the case of sport-oriented learning opportunities. This differential learning potential is in turn related to the stimulation and encouragement children receive within the family, to contextual factors, and to cultural frameworks. This opportunity–use model serves as an orientation framework for possible causal relations. Thus, the effectiveness depends on the attractiveness of the facility and how well it is fit for its purpose, as well as the access to and use of the facility. Therefore, the aim is to answer two main questions:

1. How are these unsupervised PA and exercise-oriented extended opportunities used by different groups of children and adolescents (age-specific and with regard to gender and migration background) at all-day schools?
2. How does the use of the free pop-ups relate to supervised PA and exercise-oriented opportunities?

By answering these questions, the project aims to contribute to the empirically yet still poorly documented relationship between different PAs and exercise-oriented leisure-time activities at all-day schools.

**Pop-Up Facilities—An Innovative Idea for PA Promotion**

All schools participating in the project had the opportunity to ask for pop-ups, which were installed in the schoolyard, usually for 4–8 weeks. The pop-ups were not explicitly supervised and were also available for free use outside of school hours and on weekends.

As mentioned above, four pop-ups were offered:

**“Skatepark”:** “Skatepark” (Figure 1) consists of modular park elements for cycling and roller sports, on which cycling and roller vehicles (e.g., BMX, kickboard, skateboard, inline skating, etc.) can be ridden. The space requirement is flexible, as the modules can be set up as a track or landscape, completely or partially. They cover about 20 to 50 m².
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Figure 1. Elements of the skatepark.

“Streetsoccer”: “Streetsoccer” (Figure 2) is a perimeter field with weight plates and a ground anchorage, including a net catcher. Football and floorball can be played on the field. The field is at least 15 m long and 6 m wide and can be set up on fine surfaces, grass, artificial turf, and wood chips.

Figure 2. Streetsoccer.

“Pumptrack”: “Pumptrack” (Figure 3) is a wave-trough track built from prefabricated elements for cycling and roller sports. Equipment that can be used on the track includes MTB, BMX, kickboard, skateboard, and inline skates. The space requirement is flexible but should be at least 20 m long and 20 m wide. The “Pumptrack” can be set up as a straight line, ring, or track and can be placed on a flat fine surface, such as concrete, asphalt, plastic, etc.
“Parkour”: The “Parkour” facility (Figure 4) is a construction made of iron bars and composite plates for practicing parkour-specific movement patterns. Among other things, it can be used for practicing forms of movement, such as climbing, shimmying, jumping, skipping, and crossing over and under. The space required is 10 m × 10 m or 5 m × 18 m. The facility can be set up on various surfaces and does not require anchoring.

Social workers and teachers were introduced to a safe, correct, and adequate use of the respective facilities. They also received advice on how to teach the respective movement possibilities. Appropriate introductory workshops were also held for school classes. The temporary installation of the pop-ups on the school grounds is an innovative measure that has not yet been implemented or investigated in the school context.

3. Methods

The above-described pop-ups were set up in various school buildings for four to eight weeks during the 2019–2021 school year. We investigated their use in fall 2019 and summer 2021 using a multi-method (qualitative and quantitative) approach. Applying the case study framework, we collected both qualitative and quantitative data to form a comprehensive understanding of the pop-ups [21,22] (see Table 1).
Table 1. Research design and methods.

| Characteristics | Qualitative Study | Quantitative Study |
|-----------------|-------------------|--------------------|
| **Exploratory sequential case study 1 on “Parkour” in fall 2019** | Non-participatory, semi-structured observations of the use of a “Parkour” at a secondary school (grades 7-9) in the city of Zurich in fall 2019, one month, all weekdays, including two weekends | A survey of the students of a secondary school (grades 7-9), (N = 147) about the use of a “Parkour” facility and its justification on the basis of a partially standardized questionnaire |
| **Convergent case study 2 on all pop-ups in summer 2021** | Semi-structured group interviews with the school principals and heads of student care (N = 14) on the use of the pop-ups and their perceived effect | A survey of all students of the second primary level (N = 340) on the use of the pop-up facilities using a standardized questionnaire |

The first case study in fall, 2019, focused on the single pop-up “Parkour”. It followed an exploratory sequential design, in which the initial collection and analysis of qualitative data informed the subsequent collection of quantitative data [23]. In an internal evaluation at the first secondary school in the city of Zurich to receive a Parkour facility, we first observed how the students used the installed Parkour facility during the day for a period of four weeks in fall, 2019. On the basis of these observations, we generated questions for a survey among secondary school students on the use of the pop-ups and their justification.

The second case study in summer 2021, included all the pop-ups and was designed in a convergent approach, in which qualitative and quantitative data were collected and analyzed parallel to each other, and analysis for integration began after the completion of the data collection process. The two forms of data were analyzed separately and then merged. For the overall evaluation of the project in summer 2021, we conducted interviews with all school principals and heads of student care on the organization, implementation, and use of the pop-ups by the students on the one hand and asked all second-grade primary school students about their use of the extracurricular sports offerings implemented at the schools by means of a standardized questionnaire, on the other.

3.1. Exploratory Sequential Case Study 1, Single Pop-Up (Parkour)

3.1.1. Qualitative Instruments

We conducted non-participatory, semi-structured observations at a secondary school during all-day school operation using a field diary [24] (p. 340). The observations were conducted over a period of one month on all weekdays in the periods before and shortly after school, as well as during breaks in the morning and afternoon. The field diary was structured as follows: The first page was for general comments and additional information from teachers and supervisors. The second page was for a chronological account of the observations on how the children used the Parkour facility during recess. The day of the week, the date, and the weather conditions were noted in each case so that conclusions could be drawn about the use of the facility on different days or in different weather conditions. A color code was added to the notes as follows: Each grade was assigned a color. Two other colors designated the two genders. Two other colors served to identify external users of the facility, one for children and the other for older external persons.

3.1.2. Quantitative Instruments

A semi-structured questionnaire for the survey of secondary school students (grades 7-9, N = 147) was used. The questions were developed on the basis of observations on the students’ use of the Parkour facility and had the aim of quantifying the observed use of the facility on the one hand and ascertaining the reasons for this use on the other. The
socio-demographic and family background information on the students was not collected in case study 1. The school was located in a more multicultural neighborhood in the city of Zurich. The students at the secondary school had to answer the following open-ended questions: “Do you think it is good that the course was set up at our school? Why? Have you used it? If not, explain in 3–4 sentences why you were not interested” [25].

3.2. Convergent Case Study 2, All Pop-Ups
3.2.1. Qualitative Instruments

We conducted semi-structured interviews with the school principals and the heads of student care (N = 14). The interviews took place in the school building, generally in the principal’s office or in an empty classroom. Two researchers sat opposite the principal and the head of school care. One researcher took notes, while the other conducted the interview. After a brief introduction to the project and the data management, the interviewer started by asking the interviewees about their experience and impressions so far. The interviews were recorded to allow a correct transcription. The interviews usually lasted an hour (min. 43 min, max. 85 min). The questions were addressed to both interviewees. The researchers took notes to ask follow-up questions. The school principals and the heads of student care were asked questions about the different services (“Which services are problem-free services? Why? Which services are more problematic? Why? Which services would you like to expand or reduce?”), questions about their quality (“How do you assess the quality of extended services? In your opinion, what factors determine the quality of the offers?”) and questions about their impact (“What impact have you noticed from the extended sports offerings? Do you perceive any effects of the extended sport-oriented offerings?”).

3.2.2. Quantitative Instruments

To survey the second-grade primary school students, we used a standardized questionnaire including questions on participation in the “pop-ups”, participation in the “open gym”, and participation in the “supervised sports classes”. The questions on the students’ use of the offerings, as well as on their family situation and personal background, were modeled on Quellenberg [26] (pp. 98–101). Socioeconomic status was taken into account with questions on the language spoken at home and a question on the number of rooms per person in the household.

The following questions were asked: For the question “Which sports courses do you attend each year?” the respondents could select the relevant course or “no courses”. For the question “What else do you attend?” they could select from “supervised sports classes”, “pop-ups”, the “play box”, and “open gym”. The students’ age (“I am ___ years old”), gender (“I am a boy/girl/diverse”), and the language spoken at home (“Which language do you speak at home?”) were also asked. The language spoken at home is regarded as a valid indicator of the child’s socio-cultural background. Children who do not speak Swiss German at home exhibit a more or less marked migration background, although it should also be taken into account that family structure, milieu, socioeconomic status, and type of linguistic socialization form the everyday framework for the life-world of children with a migration background [27]. Possible answers were “Swiss German/High German/French/English/Italian/Others”. To obtain data on socioeconomic status, we included a question on the number of bedrooms in the child’s household (“How many bedrooms do you have at home?”) and then divided it by the number of family members [28].

3.3. Data Analyses
3.3.1. Case Study 1

The document analysis of the field notes was based on qualitative content analysis [24] (p. 541), [29]. For the evaluation, we used a color code to order the observations and later subject them to a category-forming analysis [24] (p. 599). We identified patterns of use by
means of observation and field notes in an inductive approach. A student survey served to check conclusions drawn from the observations and clarify open questions.

The statistical analyses of the questionnaires completed by the students of the secondary school were carried out with SPSS Statistics 28 for Windows [30].

3.3.2. Case Study 2

The document analysis of the interview data was based on qualitative content analysis [24] (p. 541), [29]. The interviews with the school principals and heads of student care were first transcribed and then analyzed for content with the MAXQDA 2020 program [29]. For the evaluation of the extracurricular sport offerings, we evaluated the children’s responses on the individual offerings (supervised sport classes, open gym, play box, and pop-ups) on the basis of the categories “effective”, “less effective/action needed”, “quality of the offerings”, “effect on the students”, “rhythmization of the school day”, “well-being”, “tension and cooperation”, and “potential for optimization”.

The statistical analyses of the questionnaires of the second-grade primary school students were carried out with SPSS Statistics 28 for Windows [30].

4. Results on Case Study 1: Parkour

4.1. Semi-Structured Observations of a “Parkour” Pop-Up at a Secondary School

The results of the semi-structured observations of a pop-up “Parkour” at a secondary school showed the most frequent use by boys in the first year of secondary education (grade 7), especially during recess.

“The activities at the pop-up are wave-like: one person starts and others are encouraged to move until the activity subsides again. Ten boys in the first secondary grades are very active; some girls stand by and watch” (Obs5_amb_180919s) [25] (p. 29).

Girls generally behaved more passively. They rarely used the pop-up, and if so, then “as a place to sit and chat.” (Obs24_amg_190919c) [25] (p. 29).

In the evening, the pop-up was used by various people, from small children to teenagers to schoolgirls. On a day off from school, four girls wearing headscarves from the first and second secondary grades were observed using the “Parkour.”

“A student who had received an introduction to “Parkour” during the sports project week explained to those present how the pop-up could be used” Obs37_pmb_280919s [25] (p. 27).

Some young people used the pop-up to play football tennis by using the poles as field markings and goals.

4.2. Quantitative Survey of Students in Secondary School (Grades 7–9)

A total of 147 students participated in the quantitative survey, 56 from the seventh grade (including 31 girls and 25 boys), 51 from the eighth grade (including 30 girls and 21 boys) and 40 from the ninth grade (including 20 girls and 20 boys) (Table 2).

|        | Total | Girls | Boys |
|--------|-------|-------|------|
| 7th grade | 56    | 31    | 25   |
| 8th grade | 51    | 30    | 21   |
| 9th grade | 40    | 20    | 20   |
| Total students | 147   | 81    | 66   |

Seventy-five students regard the “Parkour” pop-up as something positive for the school, while 58 students perceive it as unnecessary or negative. The remaining students did not care or did not answer the question (Figure 5). A large proportion of the seventh grade students express positive opinions about the “Parkour”. The critical voices were
more present in the eighth and ninth grades. Positive answers concerned the increase in PA activity, combined with opportunities for social interaction [25] (p. 35).

**Figure 5.** Assessment of the “Parkour” pop-up by class and gender (percent of the total and number of entries N = 147).

“I think it was good, because a lot of people could do something other than stand around during recess” (Sxy_9.15).

“I think it’s good, because it gives children the chance to have more fun, and they can also get more exercise” (Sxy_8.1).

“Yeah, because it was fun to be on it or to watch what people were doing” (Sxx_7.23).

Negative comments showed some irritation with the new item [25] (p. 35).

“No, because it was boring” (Sxy_7.16).

“No, […] but it was also good for something, because you could sit on it” (Sxx_9.21).

“I don’t think it’s good, […] because some people don’t know how to use it” (Sxy_8.15).

In Figure 6 it can be seen that the seventh grade students used the facility most, especially the boys (N = 23). Nine of the seventh grade girls used the facility. Two of the eighth grade girls used it, and only one of the ninth grade girls used it. This girl stated:

**Figure 6.** Usage of the “Parkour” pop-up (percent of the total and number of entries N = 147).
“I always used the facility at lunchtime, when I had time. I liked that you become more self-confident and know where your limits are. But at the same time, it’s dangerous.” (Sxx_9.15) [25] (p. 40).

Several entries were possible in the argumentation of non-usage of the “Parkour” pop-up. The main reasons girls provided for not using the “Parkour” were “fear” and “other interests.” Five girls, all of them seventh graders, stated that they were not sporty. For the boys, the non-usage of the “Parkour” was mainly due to a lack of interest (N = 15) and other activities (N = 15) during extended education time (Figure 7).

![Figure 7. Reasons for non-usage of the “Parkour” pop-up by gender (number of entries).](image)

Some girls justified their non-usage as follows [25]:

“I’ve never used the facility. I found it unpleasant, because of the other students. There were always boys on it, and that’s why I found it unpleasant” (Sxx_8.16).

“I was with my friends after school and chilled out there” (Sxx_9.4).

“I wasn’t there during school, because then the boys were there and it made me feel uneasy” (Sxx_7.12).

“I never used it, because it wasn’t that fun for me. I might go there if it weren’t in the middle of the schoolyard but a bit more to the side” (Sxx_8.2).

5. Results of Case Study 2
5.1. Semi-Structured Interviews Conducted with the School Principals and Heads of Student Care on Usage and Perceived Effects of All Pop-Ups

In the interviews, the principals, and the heads of care emphasized their observations of heavy and various usage of the new facilities and the additional physical, social, and emotional opportunities they provided.

“The pop-ups were opportunities that complemented the lessons in many ways: teachers introduced students to the activity within the lessons; then students would keep on trying during the breaks and their free time” (SP_1_3.21).

According to the school principals and heads of student care, the pop-ups were very popular with the students and therefore were used frequently by many of them and in many different ways.

“There were always children on the track, using it in some way at all times” (HSC_9_4.16).

Children developed common rules in connection with the use of the facility in order to regulate play behavior and enable fair participation.

“We suddenly saw how they made up rules. You could go around twice and then had to take the exit. This gave all the children a chance to use the track” (SP_14_6.14).
In addition, children regulated their learning process in a highly individual manner, greatly improving their motor skills. While some children used the equipment, others observed first or were supervised and supported by more competent peers. All the children were observed making great progress in motor skill development within a short period of time.

“It was astounding how fast the children learned. There were children who didn’t know how they were supposed to move at first. Two weeks later, they darted around on it and could do little tricks” (HSC_4_5.107).

“Today I can say that all the children at our school can ride a scooter safely. That wasn’t the case previously” (SP_7_6.43).

Children who otherwise received little exercise moved creatively on the pop-up equipment. In doing so, they used the equipment in different ways and began to behave competitively.

“The very small ones mostly ran up and down the track in the beginning. The bigger ones, on the other hand, got on the track with all the other equipment, like the bicycles, the soapboxes” (HSC_3_8.31).

“The poles were used for other purposes: Some children used them to play a kind of volleyball” (SP_2_8.51).

In summary, the advantages of the pop-ups for students are improved self-regulation, peer orientation, and inclusion. If the teachers and social workers received an introduction to or training on the use of the facilities, increased usage could be identified in the usage of the facilities in (sports) classes and in leisure time.

“When the teachers are trained, then they also use this facility in regular physical education classes” (SP_4_7.21).

On the other hand, if students received introductions, they shared their knowledge with others, thus attracting more children. Due to the location of the facilities in the school playgrounds, they could be used by the community and were freely accessible. This led to active use by the public outside of school hours and on the weekends. In this regard, the facilities were described as a community meeting point.

“There were hordes of families there on the weekends, playing and picnicking. You could also see parents trying out the equipment—there was a lot of laughter and a good atmosphere” (SP_11_5.23).

Facilities suited for vehicles ("Pumptrack", "Skatepark") were discussed critically, regarding the availability of protective equipment and the use of personal vehicles (scooters, bicycles, etc.). It is necessary in this regard to give careful consideration to potentially systematic disadvantages for certain groups who, for example, do not have their personal vehicles. Due to limited space, the pop-ups could not be used at all schools, or they blocked existing sports areas, such as a basketball court. In this regard, a preferred period of between four and six weeks has been mentioned as the optimal period of use.

5.2. Quantitative Survey of Second-Grade Students

A total of 407 second-grade students from 14 schools participated in the survey: 226 boys, 175 girls, and 1 other. The students had an average age of 8.1 (±0.5) years. The language spoken at home by 226 (55.5%) students were Swiss-German, and that of 217 (53.3%) for other languages. Overall, 170 students used the supervised offerings and 263 the unsupervised offerings. The unsupervised offerings included the “open gym”, the “pop-ups”, and the “use of the equipment box” during recess (Table 3).
Table 3. Sample description of all second-grade students (N = 407).

|                          | Age | Language Swiss German | Other Languages | Bedrooms per Person |
|--------------------------|-----|-----------------------|-----------------|--------------------|
|                          | n (%) | M ± SD | n (%) | n (%) | M ± SD |
| Total                    | 407 (100) | 8.1 ± 0.5 | 226 (55.5) | 217 (53.3) | 0.8 ± 0.5 |
| Boys                     | 226 (55.5) | 8.0 ± 0.4 | 113 (27.8) | 129 (31.7) | 0.8 ± 0.4 |
| Girls                    | 175 (43.0) | 8.1 ± 0.5 | 108 (26.5) | 85 (20.9) | 0.8 ± 0.5 |
| Other/diverse            | 1 (0.2) | 8.0 | 1 (0.2) | 0 (0) | 0.7 |
| Voluntary school sports  | 170 (41.8) | 8.1 ± 0.4 | 84 (20.6) | 102 (25.1) | 0.8 ± 0.5 |
| Unaccompanied offerings  | 263 (64.6) | 8.1 ± 0.4 | 143 (35.1) | 148 (36.4) | 0.8 ± 0.5 |

Since not all schools had pop-ups available, only children whose school had a pop-up available (N = 340) were considered. Overall, 26.8% of the students reported using the pop-ups (N = 91). Of these 91 students, 58 were boys and 31 were girls. Of the total of 340 students, 17.1% of the boys and 9.1% of the girls used a pop-up (Table 4).

Table 4. Differentiated use of the sports facilities of all second-grade students (N = 407). For the use of pop-up facilities, only pupils who had a pop-up facility available at school were considered (N = 340).

|                          | Supervised Offerings | Unsupervised Offerings | Open Gym | Pop-Ups (N = 340) |
|--------------------------|----------------------|------------------------|----------|-------------------|
|                          | n (%)                | n (%)                  | n (%)    | n (%); % rel      |
| Total                    | 170 (41.8)           | 263 (64.6)             | 152 (37.3)| 91 (22.4; 26.8) |
| Male                     | 114 (28.0)           | 158 (38.8)             | 100 (24.6)| 58 (14.3; 17.1) |
| Female                   | 55 (13.5)            | 100 (24.6)             | 49 (12.0) | 31 (7.6; 9.1)    |
| Diverse                  | 0 (0)                | 1 (0.2)                | 1 (0.2)  | 0 (0)             |

To obtain a deeper insight into the specific use of the different sport-oriented offerings by the students, we asked the children who used the pop-ups whether they additionally used the “open gym” during lunchtime and the “voluntary school sports” after school. The “open gym” was a low-threshold PA and exercise opportunity that children could use flexibly and without registration, usually during lunchtime. The “voluntary school sports” were poly-sportive and discipline-specific sports courses that were attended throughout the school year and required registration.

Of the 91 students who used the pop-up, 20 (21.97%) only used the pop-up facilities, 24 (26.37%) also attended the “voluntary school sports” or the “open gym,” and 23 (25.27%) attended both the “voluntary school sports” and the “open gym.” Figure 8 shows a clear division in the use of extracurricular sports by four more or less equal groups of students (Figure 8).

Figure 9 shows the usage of pop-ups by gender and by language spoken at home. The results show that the facilities were mainly used by boys who do not speak Swiss German at home (N = 33, 36.2%), followed by boys who speak Swiss German at home (N = 26, 28.6%). The girls who used the pop-ups mainly speak Swiss German at home (N = 19, 20.9%), while 13 girls (14.3%) using the facilities do not speak Swiss German at home.
6. Discussion

Children in all-day schools are able to spend more time at school and take advantage of extended activities. With a focus on exercise and PA, this study showed age- and gender-specific preferences for the use of a new offering: pop-ups. In addition, the data from this study permits well-founded conclusions in regard to the quantity (extent) and quality (specificity) of usage. Through the use of these extended offers, schools meet the public demand for the synthesis of education and leisure in the areas of education, recess, and sports [4,7,10,12]. Furthermore, they contribute to the promotion of children’s health [31].

Instead of being supervised by adults, the pop-ups were regulated mainly by a heterogeneous group of students. These students used the facilities adaptively and according to their abilities. At the same time, we observed a high level of peer orientation: the students supported each other actively or passively, through observation and/or imitation, and through mutual encouragement.

The case studies demonstrate that these movement-intensive facilities motivated a group of students who had not previously been engaged in organized physical activities.
Students who do not participate in PA can be engaged by these facilities. Therefore, the pop-ups in the schoolyard can be considered an attractive alternative to supervised activities on the one hand and less intense physical activities on the other.

On the whole, the perceived success of the pop-ups seems to depend on the student’s social integration, self-regulation, and self-experience of motor competencies. Furthermore, it can be stated that the pop-ups had a variety of uses, even beyond the school day. For example, they were used by families and the community in the evenings and on weekends.

Approximately one-quarter of the second-grade students included in the case studies used the pop-ups exclusively. This indicates that these facilities encourage a group of children to exercise at school who otherwise would not have been motivated by any of the other facilities.

We would also like to highlight the use of the pop-ups with regard to cultural background. About half of the children who used the facilities do not speak Swiss German at home and come from a different cultural background. Contrary to existing results that show migrant children as hard to reach [14–17], we found that pop-ups have the potential to promote PA with a low threshold, reaching children from different socio-cultural backgrounds. Special attention should be given to the fact that a majority of the boys, but also about 14% of the girls who used the facilities, do not speak Swiss German at home. This is important since children and adolescents with migration backgrounds are overrepresented among non-athletes [9,32]. Our results are in line with Brockman and colleagues [33], who show that children with a migration background and less affluent families have less access to supervised PA activities but spend more time on unsupervised PA activities. Targeted PA promotion that enables participation in the culture of sport should therefore be directed at groups that have been consistently identified in research as “at-risk groups”.

Both case studies showed that fewer girls used pop-ups than boys. Girls in the lower grades of secondary school (grades 7–9) explained their non-usage with feelings of shame and/or fear. This should be taken into account when introducing the facilities. Specifically, girls should be inspired to set their own goals and given guidance to experience themselves as effective in sports [34]. Furthermore, since exercise-oriented offerings take into account the interests, needs, and strong heterogeneity of girls, they are more likely to reach this group [35,36].

On the basis of the usage data, we conclude that the infrastructure of exercise-oriented opportunities at all-day schools should be as diverse as possible. Since access to and participation in organized sports is often limited for children with a migration background, the described pop-ups are particularly suitable. They provide low-threshold opportunities for exercise during the day. While they do not require fixed times of use, they can be linked to lessons and are close to the children’s place of residence or school. In this way, PA can be self-regulated, self-determined, and set in a familiar social environment without the pressure to perform cf. [37]. In this regard, pop-ups apply to the basic assumptions of self-determination theory [38]. The fulfillment of the basic needs competence, connection, and autonomy seems to be fulfilled in a different way than other offers. This implies the possibility that pop-ups have particular effects on motivation, PA levels, and well-being [39]. The pop-ups are thus attractive, active, and focused opportunities for learning, which not only promote professional competence but also enable social learning in a versatile and highly self-regulated way.

Limitations

The presented multi-method data collection and analysis offers a first insight into the use of the pop-ups in the context of the project “Sport im Lebensraum Schule” (Sports in the School Environment). In the future, further studies with a longitudinal perspective are needed to accurately identify coupling mechanisms that form an integrative synthesis between curricular and extended education. Additionally, impact on and the development of physical and mental health can ideally be measured with an adequate study design, that is, a longitudinal quasi-experimental assessment of objectively measured PA and fitness.
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Institutional Review Board Statement: Our study fully conforms to the Declaration of Helsinki. Ethical review and approval was partially waived for this study, as no medical parameters were collected in the study. The responsibility lay with the cantonal school authorities. Therefore, the legal and school-relevant ethical requirements were checked with the school authorities of the city of Zurich and with the local school administrations of the participating primary schools.

Informed Consent Statement: The children and their parents were informed about the general purpose of the school project and the study, the voluntary nature of the participation, and the anonymous handling of the data.

Data Availability Statement: The data presented in this study are available on request from the corresponding author. The data are not publicly available due to ethical guidelines of the city of Zurich School Authorities.

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