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### General Contributions

**Huang/Leon/La Torre** • Using Entropy Balancing to Reduce the Effects of Selection Bias in Afterschool Studies

**Kanefuji** • Extended Education Supported by Parents and the Community

**Noam/Triggs** • Out-of-School Time and Youth Development

**Schüpbach/von Allmen/Frei/Nieuwenboom** • Educational Quality of All-Day Schools in the German-Speaking Part of Switzerland

**Underwood/Mahmood/Pranzetti/Toloza O. Costa** • Dinosaurs and Other Dangers

### Developments

**Haglund** • Report from the Leisure-time Pedagogy network at the NERA congress, March 2017

**Mücke-Gerhard/Maschke** • "International Workshop on Empirical Educational Research - Extended Education"

**Schüpbach/Stecher** • The newly launched WERA-IRN EXTENDED EDUCATION

**Cladellas Pros/Castelló Tarrida** • Extra-curricular activities in Spain

### Book Review

**Fraij/Janzen/Kielblock** • Recommended Readings in Extended Education

**Sefton-Green** • Review of: Funds of Identity; Connecting Meaningful Learning Experiences in and out of School, Cambridge University Press

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## Editorial

Since 2013, the International Journal for Research on Extended Education is a tool for researchers over the world to share their works and findings that are connected with the field of extended education. With this issue, the IJREE is in its fifth volume. Although the publication of this issue has been delayed due to organizational changes – we apologize to our readers for –, the variety of fruitful and interesting articles hasn't got lost.

There are five *General Contributions*. In their article, *Denise Huang, Seth Leon and Deborah La Torre* concern themselves with the reduction of selection bias in afterschool studies by using entropy balancing. This contribution is followed by the remarks of *Fuyuko Kanefuji* in how far extended education that is supported by parents and the community impacts Japanese schoolteachers. Furthermore, *Gil Noam and Bailey Triggs* deal with the influence of social-emotional development in youth on the practice of programs. *Marianne Schüpbach, Benjamin von Allmen, Lukas Frei and Wim Nieuwenboom*, in their article, take a glance at the educational quality of all day schools in the German speaking part of Switzerland. To conclude the general contributions section, *Charles Underwood, Mara Welsh Mahmood, Dirce F.M. Pranzetti and Maria Cecilia Toloza O. Costa* highlight the role of navigational play in a world of trouble, using the example of Projeto Clicar.

Within the scope of the *Developments* block, *Björn Haglund* reports on a meeting of the Leisure-time Pedagogy network at NERA congress in Copenhagen. Moreover, *Ann-Kathrin Mücke-Gerhardt and Sabine Maschke* take a look back at the “International Workshop on Empirical Educational Research” that took place in 2016 in Marburg. In line with these remarks, *Marianne Schüpbach and Ludwig Stecher* refer to the acceptance of the Network on Extracurricular and Out-of-School-Time Educational Research (NEO ER) as the new International Research Network Extended Education within the World Education Research Association (WERA). To conclude this, *Ramon Cladellas Pros and Antoni Castello Tarrida* invite the reader to learn more about sports-related extracurricular activities in Spain and their personal and academic implications.

In their contribution in the *Reviews* part of the journal, *Amina Fraij, Franziska Janzen and Stephan Kielblock* offer an overview of recommended literature in the field of extended education before *Julian Sefton-Green* portrays Moisés Esteban-Guitarts “Funds of Identity: Connecting Meaningful Learning Experiences in and out of School” in his book review.

Though there is a high number of submissions we would like to encourage researchers within the field of extended education to submit papers, and also suggestions for book reviews and proposals for short research reports for the section *Developments in the Field of Extended Education*.

*Sabine Maschke, Ludwig Stecher, Stephan Kielblock, and Franziska Janzen*



# Using Entropy Balancing to Reduce the Effects of Selection Bias in Afterschool Studies: An Example in Studying the Relationship between Intensity of Afterschool Program Participation and Academic Achievement

*Denise Huang, Seth Leon & Deborah La Torre*

**Abstract:** Every since the enactment of the No Child Left Behind Act (2001) in the United States, achievement gains resulting from afterschool participation have been of particular interest. However, findings have been inconsistent. The challenge for researchers is partly due to the wide variation of program goals, difficulty in obtaining valid control groups, difficulty in obtaining clean records of data, the high transience rates of the students, and in particular, the failure to differentiate among the dosage students receive and the inherent potential of selection bias in the afterschool population. This study draw on a large dataset and allows for the analysis of effects over the course of several years. Using LA's BEST afterschool program as an example, this study employed advanced methodology to reduce selection bias in examining the relations between afterschool program participation and academic achievement.

**Keywords:** afterschool program, participation, academic achievement, selection bias, LA's BEST

## Introduction

Since the turn of the century, interest and funding in afterschool programs has increased significantly. For example, California increased its yearly budget for afterschool programs from 120 to 550 million during the 2006–07 fiscal year (California AfterSchool Network, 2007). As a result, funders and policymakers are demanding greater accountability of programs. In particular, with the enactment of the No Child Left Behind Act in 2001, achievement gains resulting from afterschool participation have been of particular interest (Lauer, Akiba, Wilkerson, Apthorp, Show, & Martin-Glenn, 2006). However, while many researchers consider afterschool programs to be a potentially powerful resource to achieve this goal, the reported findings on academic outcomes tend to be mixed (TASC, 2005; Vanderhaar & Muñoz, 2006). This is thought to be due to a wide variety of reasons including the wide variation of afterschool program goals, difficulty in obtaining valid control groups, access to clean

program records, and high transience rates among staff and students (Lauer et al., 2006). In particular, we believe that studies of these programs are impacted by the inherent potential of selection bias in the afterschool population and the failure of many researchers to differentiate among the dosage (participation hours or days) that student participants receive (Lauer et al., 2006).

With these issues in mind, the present study furthers the afterschool research through the use of an entropy balancing technique to reduce self-selection bias among a large student sample. This study employed this advanced method to examine the longitudinal effect of dosage on students' academic outcomes over a period of four years. Accordingly, the main research question for this study is as follows: Do the achievement outcomes of LA's BEST students' vary as a function of their different intensity levels of afterschool participation?

## Review of the Literature

Dosage is a critical factor to examine when assessing the effect of an intervention. This is because an examination of dosage enables researchers to determine whether participants are receiving a sufficient treatment in order to demonstrate an effect. Even though dosage, or intensity of participation, is important to determining program success, it has only recently been examined in the literature on afterschool programs. In general, these studies found a positive relationship between intensity of participation and positive student outcomes. For instance, Frankel and Daley (2007) found that higher afterschool attendance was associated with higher academic achievement. In addition, Goldschmidt, Huang and Chinen (2007), found that medium (10–14 days per month) and high attendance (15 or more days per month) in an afterschool program was associated with lower juvenile crime rate. Multiple studies also found a relationship between afterschool attendance intensity and higher day school attendance (Frankel & Daley, 2007; Jenner and Jenner (2007); Huang, Gribbons, Kim, Lee, & Baker, 2000; Welsh, Russell, Williams, Reisner & White, 2002; Munoz, 2002).

Thus, in reviewing research on participation and outcomes in afterschool programs, it appears that many studies that claim positive outcomes reported academic improvement in students with a higher dosage of afterschool participation, while those that reported null or negative findings more often looked at participants of afterschool programs as an aggregated group. As such, we believe it is important that those who study afterschool program effects to consider examining “dosage” or intensity level.

### *Reducing Selection Bias*

Another frequent critique of afterschool studies is selection bias (Hollister, 2003; Little & Harris, 2003; Scott-Little, Hamann, & Jurs, 2002). Because afterschool program participation is voluntary, students (or their parents) self-select themselves

into participation and non-participation groups. In comparing participating students to non-participating students in the same school, there are inherent biases that researchers need to balance or control in order for the findings to be valid.

Furthermore, while the U.S. Department of Education (2003) has emphasized the importance of using experimental designs with control groups in educational research, reaching this “gold standard” is difficult in afterschool programs due to social contexts. Moreover, it is often difficult and potentially unethical for most afterschool programs to randomize their participants unless they are grossly oversubscribed. More specifically, unless programs have many more applicants than available spaces, random assignment would mean refusing to accept some students into the program so that they could serve as controls. Students who are refused enrollment may end up unsupervised and without the homework help they desperately need.

As a result, many studies lack a true experimental design or control group. Thus, most studies in this field are quasi-experimental, with researchers using a comparison group and making use of statistical controls. In these quasi-experimental studies, one needs to be cautious when inferring causality. With this in mind, the present study reduces self-selection bias by removing pre-existing category differences using entropy balancing. This method was employed because it has been shown in simulations and empirical applications to lower approximation error and reduce model dependency (Hainmueller, 2011). More specifically, use of this method enabled us to remove differences in observed student background characteristics between those who attended the afterschool program and those who did not. It also enabled us to attribute differences in achievement outcomes to treatment dosage with more confidence.

The sample base for this study consisted of participants in an afterschool program called Los Angeles’ Better Educated Students for Tomorrow (LA’s BEST). This program was selected because it serves students in a large school district and it shares many of the common features of quality afterschool programs that serve urban, low-income, and low-performing schools. Additionally, the student demographic profiles for LA’s BEST are very similar to the national profiles of urban afterschool participants. Thus, inferences from this study can be generated to other urban afterschool programs serving similar populations. First, a brief description of the LA’s BEST program is provided.

### The LA’s BEST Program

LA’s BEST was first implemented in the fall of 1988. The program operates under the auspices of the Mayor of Los Angeles, the Superintendent of the Los Angeles Unified School District (LAUSD), a board of directors, and an advisory board consisting of leaders from business, labor, government, education, and the community.

LA’s BEST seeks to provide a safe haven for at-risk students in neighborhoods where gang violence, drugs, and other types of anti-social behaviors are common. The program is housed at selected LAUSD elementary schools and is designed for students in kindergarten through fifth or sixth grade, depending upon the school. The LA’s BEST sites are chosen based on certain criteria, such as low academic performance and their location in low-income, high-crime neighborhoods. For opti-



mal program success and to ensure buy-in from the principals and the school staff, the school principals have to write an official letter of request for the program to be placed in their school site.

LA's BEST is a free program open to all students in the selected sites on a first-come, first-served basis. Students who sign up for the program are expected to attend five days a week in order to reap the full benefits of the program. Program offerings include academic assistance, enrichment, and physical activities. At the time of this study, LA's BEST served a student population of approximately 34,000 with about 80% Hispanic and about 12% African American elementary students. English Learners comprised at least half of the student population at most sites. Of this population, the majority's primary language was Spanish, while the other percentage of the English Learner population was composed of those whose first language was of Asian/Pacific origin.

Cognitive beat and homework beat	Recreation beat
<p>Intellectual development:</p> <ul style="list-style-type: none"> <li>• <b>Future aspirations</b> – through high expectations, activities that build self-reliance, value of education, collaboration, and critical thinking.</li> <li>• <b>Love of learning</b> – through active participation, exploration, and engaging research-based activities.</li> <li>• <b>Responsibility and positive work habits</b> – through emphasis on the importance of completing assignments, teaching learning strategies and study skills, and providing a learning climate that enforces positive attitudes towards school.</li> <li>• <b>Self-efficacy</b> – through guided experiences, challenging activities, and relationship building between staff and students.</li> </ul>	<p>Physical and social-emotional development:</p> <ul style="list-style-type: none"> <li>• <b>Healthy lifestyle</b> – through curricula and activities that promote drug and gang prevention, healthy eating habits, and plenty of exercise.</li> <li>• <b>Respect for diversity</b> – through role modeling and curricula that enhances awareness and responsibility to each other within their diverse community.</li> <li>• <b>Sense of community</b> – through providing students with opportunities to participate in community-sponsored events, volunteer in community assignments, and offering field trips to local businesses and organizations.</li> <li>• <b>Sense of safety &amp; security</b> – through providing students with a safe and nurturing environment.</li> <li>• <b>Social competence</b> – through demonstrating and enhancing students' respect for self and others, and providing students with opportunities to form friendships and develop trust and respect with peers and adults.</li> </ul>

*Figure 1. LA's BEST 3.5 Beat Structure*

Since its inception in 1988, LA's BEST has adapted and updated their goals in response to educational policies, research, and theory. Over the years, the program has moved past its initial emphasis on providing a safe environment and educational enrichment to an emphasis on the development of the whole-child. In developmental theory, a whole-child curriculum is one that cultivates the development of students' intellectual, social, and emotional well-being so that children can achieve their full potential (Schaps, 2006; Hodgkinson, 2006). As shown in Figure 1, at LA's BEST,

their 3.5 beats focus on the whole-child by emphasizing students' intellectual, social-emotional, and physical development.

To summarize, the mission of LA's BEST is to provide elementary age students with a physically and emotionally safe setting during the afterschool hours that is engaging and connects to the school and broader community. And, most importantly, provides students with access to extra-curricular activities, challenging academic enrichment, and qualified, caring adults (see LA's BEST, n.d.).

## Study Design and Methods

This study employs a quasi-experimental design that consists of a longitudinal sample of both academic and LA's BEST program attendance data. The sample was comprised of two cohorts of students who had no LA's BEST participation during second grade (2005-06 and 2006-07). The students in each cohort were then followed from third through fifth grade, using an entropy balancing method. This method enabled us to model the sequential treatment status of the students that varied across time. Each model presented defines treatment status based on student dosage (intensity of attendance) in the program in a given year. This was done in order to remove any existing differences in the observed student background characteristics across treatment status. Finally, hierarchical growth modeling was applied to academic outcomes with specific effects of interest estimated. A non-response weight was also included to adjust for missing data.

Two benefits were gained by utilizing the longitudinal nature of the data to follow students' academic development over time. First, it allowed the study to move beyond traditional pre/post analysis, which is limited by data requirements and explanatory possibilities (Rogosa, Brandt, & Zimowski, 1982; Raudenbush & Bryk, 2002). The study was able to employ growth-modeling techniques to examine individual trajectories (Rogosa et al., 1982) and had more flexible data requirements. Second, we were able to adapt an approach developed by Hong & Raudenbush (2008) to study the effects of time-varying treatments on student achievement.

### *Defining the Study Sample*

The basis for this study sample is the LAUSD student database that the research team has collected and stored since the 1992-93 school year. The first step in constructing a study sample is to generate a sampling frame. This task was accomplished by going back through the historical records and tracking four years of background and California Standards Tests (CSTs) achievement data for the students in the two cohorts. Students who were in second grade during the 2005-06 and 2006-07 school years who did not participate in LA's BEST at baseline and who had complete data throughout the study period (e.g., afterschool attendance, achievement scores, day school attendance, behavior ratings, etc.) were included in these cohorts. Since a recent study reported that self-discipline in students is a predictor of academic abilities

(Ponitz, McClelland, Matthews, & Morrison, 2009), the behavior ratings used were limited to five student self-discipline items (i.e., follows direction, accepts and respects authority, shows dependability, take responsibility, and exercises self-control). Furthermore, because of the expansion of the LA’s BEST program across its approximately 20-year history, the 2005–06 cohort included students from 148 schools, while the 2006–07 cohort included students from 168 schools.

Examination of student attendance patterns indicates that students participate in afterschool programs with varying regularity. Therefore, it is necessary to set criterion to measure the students’ dosage. To accomplish this, attendance levels were set for the treatment students based on the average number of days students participated per year. These included the following: (1) any attendance, (2) 2 days per week or a minimum of 72 days per year, (3) 2.5 days per week or a minimum of 90 days per year, (4) 3 days per week or a minimum of 108 days per week, (5) 3.5 days per week or a minimum of 126 days per week, and (6) 4 days per week or a minimum of 144 days per year.

Using the English language arts sample as an example, Figure 2 illustrates the manner in which students were included in the various models. Approximately 35,000 students had valid data during the baseline years for the two cohorts. Of these students, those who were enrolled in LA’s BEST at baseline were excluded. This step was necessary so that all treatment and control students in the study had the same treatment status at baseline. Additional students were excluded from the sample due to missing outcome or background data during third, fourth, or fifth grade. As a result, approximately 12,500 of the students across these two cohorts received some treatment.

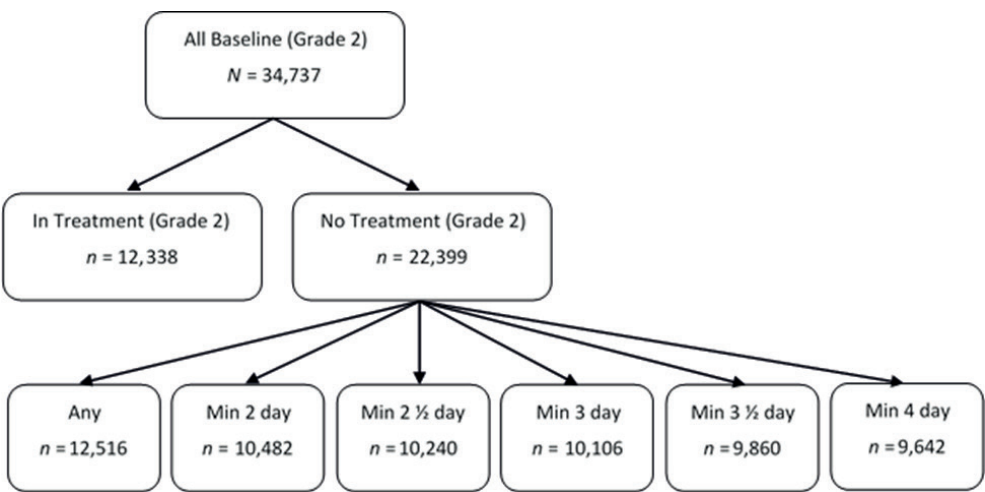


Figure 2. English language arts sample for the two cohorts

### Non-Response Data

For the purposes of this study, non-response data is defined as students dropped from the analysis due to either missing data or having attended the LA's BEST program in second grade. The day school attendance and tardiness covariates in this adjustment are omitted because close to 5,000 students were missing data on these indicators at baseline. The day school attendance and tardiness covariates in the primary analyses were included due to their potential connection to attendance in afterschool programs and because they do not add substantially to missing data in the follow-up for third, fourth, and fifth grade.

Means for the baseline covariates used to adjust for non-response are presented in Table 1 for the original sample and for students comprising the math outcome sample. Although no single covariate was strongly associated with non-response, eight of the ten did have some level of significant association. The strongest association with non-response occurred with teacher ratings of student behavior. Students included in the analyses had slightly better baseline behavior ratings than those not included. Non-response was adjusted by creating a predicted probability of non-response using logistic regression entering the ten covariates in Table 1. The predicted probability is later used as a final adjustment weight (see growth model section).

*Table 1.* Means of Baseline Covariates for Original Sample and Valid Response with Effect (Eta)

	Original <i>n</i> = 34,737	Non- Response <i>n</i> = 22,221	Any Participation <i>n</i> = 12,516	
	Mean	Mean	Mean	Eta
Grade 2 Limited English Proficiency (1 = yes, 2 = no)	0.575	0.564	0.596	0.032**
Grade 2 Cohort (1 = 2005-06, 0 = 2006-07)	0.475	0.492	0.443	0.048**
African American (1 = yes, 2 = no)	0.091	0.105	0.068	0.062**
Hispanic (1 = yes, 2 = no)	0.807	0.794	0.831	0.044**
Parent- Some College (1 = yes, 2 = no)	0.169	0.171	0.166	0.006
Parent- HS Graduate (1 = yes, 2 = no)	0.195	0.192	0.201	0.011*
Parent- Not HS Graduate (1 = yes, 2 = no)	0.289	0.281	0.303	0.023**
Male (1 = yes, 2 = no)	0.507	0.509	0.502	0.008
Grade 2 Behavior Rating (z-score)	0.003	-0.068	0.128	0.094**
Grade 2 Math CST (z-score)	-0.112	-0.152	-0.041	0.056**

## *Controlling for Existing Population Differences*

Students who attend LA's BEST self-select into the program rather than being randomly assigned to attend. Thus, there are likely to be differences in observed data between those who attend the program and those students in the same schools who do not attend. In observational studies, matching and propensity methods are often used by researchers to improve the balance in observed covariates between treatment and control subjects (Hainmueller, 2011; Ho et al., 2007; Sekhon, 2009). This preprocessing step is often approached using logistic regression to estimate the probability that a subject would be in the treatment group. The propensity outcome is then used to create balance among the student background characteristics. This process can be done using matching, stratum, or weighting techniques.

At present there is no accepted consensus concerning which approach to use for preprocessing observational data. Furthermore, one common concern is that the most commonly used methods do not directly or necessarily create balance among covariates (Hainmueller, 2011). This requires the researcher to check carefully that covariate balance has been achieved with a correctly specified propensity model. This can be a time consuming process with no guarantee that covariate balance will be achieved.

For this study, an entropy balancing method was used to preprocess the data. Entropy balancing has several important advantages over propensity methods. The first is that entropy balancing directly balances covariates to preconditions (moments) set by the researcher. If the model converges, then balance has been achieved. Unlike propensity matching methods, and similar to inverse weighting methods, entropy balancing re-weights each observed case which is useful in longitudinal studies. In addition to directly balancing the covariates, this approach includes a second step in which the weights are refined, with large weights being reduced to minimize the variance in the analyses that follow.

**Use of balancing covariates.** Covariates used in preprocessing observational data should either be static indicators such as gender or ethnicity, or they should be measured prior in time to the treatment indicator on which balance is desired. This ensures that the covariates are not affected by the treatment. Covariates should be included when it is reasonable that they may simultaneously influence selection into treatment and the outcome measure (Caliendo & Kopeinig, 2005).

In this study, it was necessary to balance treatment and control populations in third, fourth, and fifth grade. A set of baseline covariates in second grade were used at each of these grade levels. These baseline covariates included the following: gender, ethnicity, language proficiency status, parent education, student behavior rating, day school attendance %, day school tardy %, CST score, and an indicator of the cohort in which the student belonged. A subset of the baseline indicators that were time varying were included whenever they were observed prior to treatment grade level, as were all prior treatment indicators. For example, to balance the covariates for fourth grade treatment, all baseline covariates were included, the third grade time-varying covariates (i.e., student behavior rating, day school attendance %, day school tardy %, and CST score), and the third grade treatment indicator. Each covariate was entered at the student-level and as a difference from the school mean.

This step was taken to ensure that differences at the school-level that might influence the likelihood of future student attendance in the program would be balanced across treatment and control populations.

Entropy balancing software (available in R) functions to re-weight the control group while keeping the treatment group un-weighted. This produces a weight for analyses that seek to determine the average treatment effect on the treated (ATT). The pseudo-sample necessary for our sequential treatment growth model methodology requires an average treatment effect (ATE) weight. Using entropy balancing, this study separately created a weight for the control and for the treatment groups that balanced each to the total sample (treatment plus control). Weights were normalized to treatment and control original sample numbers so that the mean weight for each of these groups was equal to one. The result was a weighted sample for ATE in which the covariates were balanced across treatment and control.

### *Entropy Balancing Results*

Prior to weighting there were many covariates with significant differences between treatment and control groups making entropy balancing necessary. The prior treatment indicators had the largest association with treatment selection and other individual covariates generally had a small association with treatment selection.

Significant associations between the student-level covariates and treatment selection in third, fourth, and fifth grade can be found in Table 2. Teacher ratings of prior student behavior were consistently lower among treatment students than among control students. This was likely related to student targeting practices at the different afterschool sites. Prior math and ELA CST outcomes were not associated with treatment status in the samples that did not include students who attended LA's BEST an average of less than two days per week. In the models that did include these lower attending students, prior math and ELA CST scores were slightly higher for control students than for treatment students. As might be expected, prior day school attendance differences between treatment and control student were present in the models that require some threshold of attendance intensity. Similar to the math outcomes, prior day school tardy % was more likely to be associated with treatment status in the samples that did include the lower attending students. In these samples, treated students were more likely to be tardy in past school years, which could also be the result of afterschool program targeting. Males were increasingly more likely to be represented in the control than treatment population in fourth and fifth grade. Regarding ethnicity, more African Americans were in the treatment than in the control in third grade. Conversely, fewer Hispanics tended to be in the treatment than in the control.

*Table 2. Summary of Significant Occurrences and Largest Effect Sizes (Eta) Across Six Attendance Models*

Covariates	Grade 3	Grade 4	Grade 5
Grade 2 Limited English Proficiency (1 = yes, 2 = no)	(5,.036)	(4,.030)	(1,.019)
Grade 2 Cohort (1 = 2005-06, 0 = 2006-07)	(2,.029)	( )	( )
African American (1 = yes, 2 = no)	(5,.030)	(1,.019)	( )
Hispanic (1 = yes, 2 = no)	(5,.040)	(1,.020)	( )
Parent- Some College (1 = yes, 2 = no)	( )	( )	( )
Parent- HS Graduate (1 = yes, 2 = no)	( )	( )	( )
Parent- Not HS Graduate (1 = yes, 2 = no)	(2,.024)	(1,.023)	(5,.027)
Male (1 = yes, 2 = no)	(1,.018)	(5,.031)	(6,.051)
Grade 2 Behavior Rating (z score)	(6,.056)	(6,.054)	(6,.053)
Grade 2 Day School Attendance (%)	(3,.027)	(5,.043)	(5,.044)
Grade 2 Day School Tardy (%)	(2,.035)	(1,.028)	(3,.026)
Grade 2 Math CST (z score)	(2,.046)	(2,.043)	(2,.040)
Grade 2 ELA CST (z score)	(1,.034)	(1,.042)	(2,.031)
Grade 3 Behavior Rating (z score)		(6,.059)	(6,.059)
Grade 3 Day School Attendance (%)		(5,.059)	(5,.040)
Grade 3 Day School Tardy (%)		(1,.032)	(2,.030)
Grade 3 Math CST (z score)		(2,.033)	(2,.043)
Grade 3 ELA CST (z score)		(1,.039)	(2,.046)
Grade 3 Treatment (1 = yes, 2 = no)		(6,.630)	(6,.470)
Grade 4 Behavior Rating (z score)			(6,.022)
Grade 4 Day School Attendance (%)			(5,.052)
Grade 4 Day School Tardy (%)			(2,.021)
Grade 4 Math CST (z score)			(2,.043)
Grade 4 ELACST (z score)			(2,.046)
Grade 4 Treatment (1 = yes, 2 = no)			(6,.767)
Grade 3 and 4 Treatment (1 = both years, 2 = no)			(6,.543)

Entropy balancing was employed to attain weights that balanced covariates across treatment and control separately for third, fourth, and fifth grade. This was done for the ELA and math samples at each of the six program intensity thresholds. In each case, the balancing method converged within tolerance. As a result, after weighting the mean difference for each covariate between treatment and control was essentially equal to zero, and the p-values of t-tests comparing the means equaled one.

It is possible for entropy balancing to converge within tolerance, but still result in some cases with very large weights. When this occurs, it indicates thin support



in the control population for certain covariate combinations in the treated population. Because of this, the largest weights were examined relative to the respective treatment and control populations to determine if extreme weights were a problem in our pseudo-samples. Prior work has suggested that researchers should consider trimming cases when any weight exceeds four to six percent of the sample (Huber, Lechner & Wunsch, 2010). The largest weights in our pseudo-samples occurred in the treated population when the fifth grade sample program intensity was restricted to a minimum of four days per week (144 days). This occurred because the prior treatment helped strengthen the prediction of fifth grade treatment, and because the program intensity restriction reduced the size of the treatment sample. Despite this, the largest weights only represented 2.2% of the ELA treatment sample and 2.4% of the math treatment sample under the four days per week restriction.

Unlike propensity score methods entropy balancing does not produce a prediction of the likelihood of treatment. This method does, however, enable one to infer how well the covariates predict treatment. Control cases with an increasing weight suggest a higher likelihood of treatment. Conversely, treatment cases with an increasing weight suggest a lower likelihood. This study placed the weights on a natural log scale (control cases =  $-\ln(\text{weight})$ , treated cases =  $\ln(\text{weight})$ ) and examined the area under the Receiver Operating Characteristic (ROC) curves to gain a rough understanding of how well the covariates predicted treatment at each grade level under the various program intensity thresholds. Table 3 presents the results for any treatment and those meeting the highest attendance threshold of a minimum of four days per week. After applying this approach, it was clear that treatment in third grade was only weakly predicted by the available covariates. Treatment prediction became somewhat stronger in fourth and fifth grade as the prior treatment indicators were included as covariates. This suggests that our model results may have been vulnerable to an unmeasured covariate that was associated both with the likelihood of treatment and the outcome variable. This vulnerability was strongest in third grade and in the models where no restriction was placed on program attendance intensity.

*Table 3.* Area under Receiver Operating Characteristic (ROC) Curve

Level of LA's BEST participation to define treatment	ELA		Math	
	Any Treatment	Minimum 4 days per week	Any Treatment	Minimum 4 days per week
Grade 3	0.523	0.549	0.502	0.540
Grade 4	0.557	0.656	0.579	0.699
Grade 5	0.648	0.795	0.640	0.794



### *Analysis: HLM Growth Modeling*

To examine the effects of the afterschool program on achievement and achievement growth, we employed an HLM design that has the advantage of directly modeling growth trajectories (Raudenbush & Bryk, 2002). This type of analysis allows flexible specification of the covariance structure at every level of the analysis for this study (Snijders & Bosker, 1999). This study took advantage of this flexibility by allowing the treatment effect to vary across schools.

As was previously noted, one of the aims in this study was to examine the potential causal effects of afterschool program attendance dosage on achievement growth. The study's data sample allowed the examination of this question to be undertaken longitudinally with treatments and covariates varying across time. Afterschool program attendance dosage can be conceived of as relating to both the intensity of attendance in a given year as well as the pattern and consistency of intensity across time. Hong & Raudenbush (2008) published a paper that outlined an approach for exploring causal effects with time-varying treatments within an educational setting. This study's approach follows theirs closely while adapting for differences in available data and concepts of treatment. In this study, treatment selection was conceived as occurring primarily at the student-level rather than at the level of the classroom. Even though this study lacked data connecting students to teachers and classrooms, there are data on three years of outcome and treatment opportunities after baseline.

### *Defining Specific Treatment Effects of Interest*

The availability of three years of outcome and treatment opportunities after baseline led to many potential effects. For example, there was one effect of treatment on the third grade outcome, three possible effects on the fourth grade outcome, and six more on the fifth grade outcome. To reduce the complexity of interpretation this study collapsed the potential effects into four categories. The first effect moving into treatment was named MIT. This category includes all students who had treatment in a given year after having no treatment in the previous year. The MIT effect was found in third, fourth, and fifth grade since all students in the samples were selected based on having no treatment in second grade. The second effect moving out of treatment were named MOT. This category requires no treatment in a given year after receiving treatment in the previous year. This effect could only occur in the fourth and fifth grade outcomes. MOT collapses the third grade effect on fourth grade as well as the fourth grade effect on fifth grade. Our third category, two years of consecutive treatment (CYT2), requires students to receive treatment in a given year as well as the previous year. This effect was coded when treatment was present in both third and fourth grade for the fourth grade outcome, and if treatment was present in both fourth and fifth grade for the fifth grade outcome. Finally, a category was created for those students who received three years of consecutive treatment (CYT3). This effect was coded when students received treatment in all three school years and applied to the fifth grade outcome.

Examples of how the treated samples were distributed across the groups that represent the specific effects of interest are displayed in Table 4. Results are categorized by grade level for all of the samples. Furthermore, since the sample sizes differed by only a small number of cases, only the results for the math sample and not for ELA were represented. As can be seen, all third grade students were classified as moving into treatment. In contrast, fourth grade included samples of students moving into treatment, out of treatment, as well as those with two consecutive years. Likewise, fifth grade included students in all four categories. As a result, the sample sizes of the treatment students dropped substantially as the restrictions on program attendance were increased. Nevertheless there was a reasonable distribution across the effects such that no single effect predominated.

*Table 4. Students Treatment Status Across Grade Levels – Math Sample*

Level of LA's BEST participation to define treatment	Total treated	Moving into treatment	Moving out of treatment	Two years consecutive treatment	Three years consecutive treatment
Any Participation (n = 12,516)					
Grade 3	1,813	1,813	--	--	--
Grade 4	2,030	980	763	1,050	--
Grade 5	2,065	821	786	533	711
Minimum 3 day weekly average (108 days; n = 10,063)					
Grade 3	523	523	--	--	--
Grade 4	693	302	132	391	--
Grade 5	783	228	138	241	314
Minimum 4 day weekly average (144 days; n = 9,655)					
Grade 3	306	306	--	--	--
Grade 4	429	198	75	231	--
Grade 5	494	135	70	169	190

### *Three-Level HLM Growth Model*

The HLM analysis employed was based on a three-level model. At Level 1, the standardized achievement score was modeled to be predicted by time (school year) and the treatment effects. This model includes six coefficients for each student, including an intercept and a slope, and the four previously defined treatment effects of interest. The intercept at this level is the student's status at the first time point.

$$ZCST = \pi_0 + \pi_1(Time) + \pi_2(MIT) + \pi_3(MOT) + \pi_4(CYT2) + \pi_5(CYT3) + e$$

Level 2 was modeled to account for student-level effects. Only the student-specific intercepts and growth rates were allowed vary randomly over Level 2.

$$\pi_0 = \beta_{00} + r_0$$

$$\pi_1 = \beta_{10} + r_1$$

$$\pi_2 = \beta_{20}$$

$$\pi_3 = \beta_{30}$$

$$\pi_4 = \beta_{40}$$

$$\pi_5 = \beta_{50}$$

At Level 3, the school level was included in the model. The intercept, slope and all treatment effects were allowed to vary randomly over this level.

$$\beta_{00} = \gamma_{000} + \mu_{00}$$

$$\beta_{10} = \gamma_{100} + \mu_{10}$$

$$\beta_{20} = \gamma_{200} + \mu_{20}$$

$$\beta_{30} = \gamma_{300} + \mu_{30}$$

$$\beta_{40} = \gamma_{400} + \mu_{40}$$

$$\beta_{50} = \gamma_{500} + \mu_{50}$$

Two separate models were conducted: one for math and one for English language arts. In these models, Level 1 represented time nested within students. There were four time points for each achievement model, with achievement at each time point serving as the outcome.

**Applying weights.** It has been shown that a weight that is inversely related to the probability of treatment (IPTW) can be applied to approximate data from a random sample (Robins, Herna'n, & Brumback, 2000). Using entropy balancing a weight was created that balanced observed covariates, including all prior treatment combinations, across the treatment and control populations in third, fourth, and fifth grade. The goal of this weight, like with IPTW, was to create a pseudo-sample that approximates data from a random sample. Hong & Raudenbush (2008) have shown that the IPTW method in single level settings can be applied to a multilevel educational setting. Strong sequential ignorability is defined so that treatment assignment at a given time point is independent of all potential outcomes given past observables. The weight that applies to sequential settings is conditional and cumulative.

Within the study's analyses, the entropy balancing weights were defined as follows: The weight for third grade in a sequential setting ( $sw3$ ) is simply equal to  $w3$ ; The weight for fourth grade in a sequential setting ( $sw4$ ) is equal to  $w3*w4$ ; and, the weight for fifth grade ( $sw5$ ) is equal to  $w1*w2*w3$ . In addition a non-response weight was created, which was inversely proportional to the estimated probability of having valid data given the observed baseline covariates. The final weight is the product of the sequential treatment weight and the non-response weight.

## HLM Results for English Language Arts and Math Achievement

The following presents the results from the HLM models for English language arts and math achievement.

**English language arts achievement results.** Table 5 presents the results from the three-level HLM growth models for English language arts. All significant effects were found in the models in which subjects with less than 126 days of afterschool program dosage were not restricted from the analyses. For each of the three models including subjects with less than 126 days of afterschool program dosage the moving into treatment effect was significant. Each of these significant moving into treatment effects were in the negative direction and had very small effect sizes. There was no clear trend that could be attributed to increased program dosage in a given year or across time for students with consecutive treatments. Because the baseline covariates did not strongly predict treatment status in third grade, some unmeasured confounder could potentially be responsible for the significant negative findings. If program participation was actually leading to reduced performance in English language arts we would expect the negative findings to become stronger in the analyses that focus on students' receiving higher participation. Further work is need to derive any meaningful interpretations from these results.

*Table 5.* Estimated Impact of LA's BEST Intensity of Participation on ELA CST

Level of LA's BEST participation to define treatment	Estimated Treatment effects in SD units			
	Moving into treatment	Moving out of treatment	Two years consecutive treatment	Three years consecutive treatment
Any Participation	-0.034 **	0.007	-0.056**	-0.043
Minimum 2 day weekly average (72 days)	-0.043 **	-0.032	-0.114 **	-0.079
Minimum 2 1/2 day weekly average (90 days)	-0.042 *	-0.029	-0.098**	-0.119**
Minimum 3 day weekly average (108 days)	-0.035*	-0.040	-0.081	-0.086
Minimum 3 1/2 day weekly average (126 days)	-0.028	-0.053	-0.075	-0.045
Minimum 4 day weekly average (144 days)	-0.034	-0.078	-0.078	-0.011

**Math achievement.** Table 6 presents the results from the three-level HLM growth models for Math. For the model including any participation, the moving into treatment effect was significant ( $p > 0.05$ ) in the negative direction with a very small effect size. There was a trend associated with increased program dosage for students with two years of consecutive treatment as well as three years of consecutive treatment. Students who attended the program with three years of consecutive treatment began to exhibit a significant effect ( $p > 0.05$ ) when their attendance dosage was a minimum

of 108 days in each grade. The effect was also significant with a larger effect size when the attendance dosage was a minimum of 144 days in each grade.

*Table 6.* Estimated Impact of LA's BEST Intensity of Participation on Math CST

Level of LA's BEST participation to define treatment	Estimated Treatment effects in SD units			
	Moving into treatment	Moving out of treatment	Two years consecutive treatment	Three years consecutive treatment
Any Participation	-0.031 *	0.006	-0.003	0.000
Minimum 2 day weekly average (72 days)	-0.027	-0.029	-0.013	0.000
Minimum 2 1/2 day weekly average (90 days)	-0.037	-0.067	0.041	0.045
Minimum 3 day weekly average (108 days)	-0.045	-0.058	0.078	0.100*
Minimum 3 1/2 day weekly average (126 days)	-0.041	-0.013	0.114	0.109
Minimum 4 day weekly average (144 days)	-0.024	-0.035	0.152	0.207 **

**Summary.** Results concerning language arts in terms of dosage and effects are inconclusive and require further study. Negative findings that were present when the treatment definitions included less than regular attendance were not maintained when treatment was defined as requiring consistent and regular attendance. Future studies can examine this inconsistency in more details.

In contrast, results of the analyses for math provided evidence that regular attendance in the afterschool program for a period of three consecutive years may lead to positive achievement growth. This finding was first significant at the 108 days per year (three days per week) threshold, and the size of the effect increased at 144 days per year (four days per week). When program attendance were causally related to math achievement, one could expect to find these results. Given the intricate methodological steps that have been taken, this study concludes that the most plausible explanation for these results is due to program dosage effect. However, this study cautiously stops short of making a causal inference since there is still some potential for the strong ignorability assumption to be violated by an unmeasured confounder. Similar future studies can add support and strengthen the claim in this study.

## Discussion and Conclusion

The literature provides evidence that quality afterschool programs can teach students academic and social skills, help them avoid anti-social behavior, and contribute to academic resiliency (Bradshaw et al., 2013; Durlak et al., 2010; Maynard et al., 2013, McKinsey & Company, 2009). However, sufficient exposure to effective afterschool environments is necessary in order for students to reap the benefits. At the same time, while it seems to be necessary to look at the intensity of participation (dosage) as a contribution to student outcomes, in order to have valid findings it is also important to control for the selection bias that is inherent in the field of afterschool research. This study set out to reduce a research gap by using rigorous methodology to study the effects of dosage on students' academic outcomes. It extends the current literature on the impact of afterschool programs in three key ways: first, the analyses explicitly modeled sequential program attendance and achievement outcomes longitudinally for four years; second, we defined program dosage in two dimensions (within a given year and across years); third, we used a large sample of roughly 35,000 students. Finally, we took steps to apply an entropy balancing technique and establish a valid study pseudo-sample from which we could generate valid inferences.

Currently, there are very few afterschool studies that have involved such a large study sample. This large sample size added substantial strength to the findings in this study. Furthermore, with all the careful, meticulous, and intentional methodologies, examinations, and interpretations, the findings in this study add support to the notion that regular attendance is necessary to reap benefits in math achievement. Therefore, after school programs can enhance their efforts in encouraging students to participate regularly so that they can reap the program benefits. Since this study focuses on math and English Language Arts achievement future studies can also elaborate more on other social outcomes and the dosage effect.

### *Implication on Methodology*

Studies of afterschool programs typically are designed to compare participants and non-participants without careful examination of the dosage effect. Consequently, participants may attend one day in an afterschool program and still be included in the treatment group. Meanwhile, non-participants may be enrolled in other afterschool activities and still be included in a control group without careful examination of their background characteristics. It is also rare that studies of afterschool programs consider students' prior attendance history in the program. Prior program attendance may influence the likelihood of current attendance, current performance on achievement outcomes, or both. In order to thoroughly understand the relationship between program attendance and achievement outcomes this study introduced the entropy balancing method together with the HLM analyses to account for three important issues:

1. The intensity of program attendance in a given year.
2. The consistency of attendance over time.
3. Background differences in treated and control populations may affect future program attendance and performance on achievement outcomes.

This methodology examined three years of sequential program treatment history and achievement outcomes for two cohorts of second grade students who initially did not attend the program. By confining the analyses to students who did not attend the program in second grade, a potential source for self-selection bias was removed. For math and English language arts outcomes we presented six models with treatment defined at increasing levels of program attendance. In addition, we identified four specific treatment effects that allowed for the examination of potential impacts regarding the consistency of attendance over time. This approach allowed for tracking the potential that afterschool treatment effects on achievement may require a dosage threshold of some combination or level of program attendance both within a year and across time. Analyses that only examine one of these dimensions may fail to identify important program effects. The interpretation of effects across these two dimensions also helped identify any lack of stability in the pseudo-samples we created. If, for example, positive significant effects are present at some attendance intensity level and then disappear at a higher intensity level this might suggest a problem with extreme weights or the influence of an un-measured confounder. Thus, examining the trends in the resulting effects reduces the likelihood of promoting a false finding as a true program effect.

In addition, we control for self-selection bias by directly balancing the defined treatment and control groups in each grade level and for each analyses on a set of prior observed covariates. We measured prior covariates at both the student and school levels, and included prior treatment indicators. We examined the weights produced by this balancing procedure to be confident that the treatment and control groups exhibited adequate common support. Despite these steps, we recognize that some un-measured confounder of self-selection and achievement might still have influenced our findings. We examined the area under ROC curves to determine that our findings may be vulnerable to such a potential confounder primarily in third grade.

### *Implication of Results*

Implications from this study highlight the finding that simple indicators of program participation may be inadequate to capture program effects fully. If our study simply defined treatment as any program attendance, we would have found no evidence of program effectiveness with regard to math achievement. It would be useful for future researchers with access to longitudinal program attendance data conduct similar analyses that take into account the intensity and duration of program attendance.

More importantly, study results suggest that recruitment efforts as early as second grade, and retention efforts to keep these students in the program may lead to later math achievement. However, there appears to be room for LA's BEST to improve on early program recruitment and student retainment in their program. Of the 12,516 students in the second grade math sample, 1,813 moved into LA's BEST treatment



in third grade, yet only 523 of these students maintained an average of three days per week. Fewer still ( $n = 190$ ) were able to maintain an average of four days per week during the three consecutive years. For a program to have impact on students' achievement, the students need to receive sufficient dosage. Supporting previous studies (Frankel and Daley, 2007), this study also suggests that regular afterschool program attendance (three days per week) for consecutive years may be necessary to reap program benefits on achievement outcomes. Thus, LA's BEST can improve its effectiveness by finding techniques to encourage all students to participate at this level.

## Conclusion

This study set out to fill a research gap by demonstrating the use of rigorous methodology to study the effects of “dosage” (intensity of afterschool attendance) on students' academic outcomes. Entropy balancing can be an efficient tool to reduce the challenges on selection bias in afterschool studies. More concretely, this study tracked approximately 34,000 students for four years. It was found that students who attended regularly showed achievement growth in math. Results also suggested that early program participation from second grade on may also lead to better math performance. This study confirmed previous studies in further emphasizing the importance of regular participation in afterschool programs in order to reap program benefits.

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# Extended Education Supported by Parents and the Community: Its Impacts on Japanese Schoolteachers

*Fuyuko Kanefuji*

**Abstract:** This article focuses on extended education supported by parents and the community at school and its impacts on schoolteachers' perceptions towards their work in Japan. A national survey using random sampling on elementary schoolteachers was conducted by the author; the results were used to analyze the relationships between the following variables: the existence of SSRHs, parent- and community-supported extended education, and teachers' perceptions toward their work and that of the local network. While several studies in the field have focused on extended education's effects on children, the current study is valuable because it discusses how extended education can affect other educational stakeholders. This study's findings therefore identify a new area of investigation that can be used to evaluate extended education's efficacy.

**Keywords:** Extended education, Support by parents and the community, Impacts on schoolteachers, Factor analysis, SEM

## Introduction

Although less prevalent than those on Western countries, there are still several studies that evaluate Japan's extended education program (including after-school classes for children) as implemented by the Ministry of Education, Culture, Sports, and Technologies (MEXT) in 2007. Furthermore, as extended education normally targets children and youth, it is understandable that the current literature (both in Japan and internationally) has focused predominantly on this population.

However, this focus is problematic, as there is little information on how extended education affects other educational stakeholders, making it harder to fully understand this pedagogical method. In other words, even though there are studies focusing on other aspects and stakeholders of extended education, these studies still focused on how these various factors affect children. This ultimately means that there is insufficient research into how other extended education participants and relevant personnel (e.g., parents, community residents, schoolteachers, etc.) are affected.

This article therefore analyzes the relationship between the extended education system as supported by parents and the community and its impacts on Japanese

schoolteachers. Through this, the author will elucidate how extended education affects non-youth populations. Prior to the analyses, we will discuss Japan's extended education system and contextualize this research using the existing literature. We will develop scales to help identify teachers' perceptions towards their work and that of the local network (i.e., between the school, the students' families, and the local community). An analysis of how parent- and community-supported extended education programs affect schoolteachers will also be provided.

## Review of the Literature

### *Studies Evaluating Extended Education and Its Impact in Japan and other countries*

There are many studies analyzing extended education's effect in various contexts. This includes studies in Germany (Stecher & Maschke, 2016), the UK (Dyson & Kerr, 2016), the USA (Huang, 2016), Sweden (Klerfelt, 2016), Australia (Welsh, 2016), and Japan (Kanefuji, 2016), all of which provide an evaluation of each nation's school-based after-school activities and educational policies. In this subsection, we will only review the literature on the US and Japan due to both space constraints and the fact that quantitative evaluation studies on this subject are mostly American-based (Dyson & Kerr, 2016, p. 89).

Based on 52 selected studies in her review of American after-school programs, Huang showed that they have a wide range of effects (Huang, 2016, pp. 167–212). More specifically, after-school programs were found to have a positive impact on students' academic achievement scores (Arcaira, Vile, & Reisner, 2010; Reisner et al., 2004; Russell et al., 2007; Vandell, Reisner, & Pierce, 2007). The review also looked at students' attitudes towards school and learning as precursors to actual achievement outcomes. After-school programs were found to improve students' regular school day attendance, and learners reported higher aspirations regarding finishing school and going to college (Huang et al., 2004). Furthermore, after-school program participants were significantly less likely to drop out of school when compared to matched non-participants (Huang et al., 2007; Arcaira, Vile, & Reisner, 2010).

Other key findings in the literature concerning the effect of extended education are as follows. First, the participants and their parents felt safe during and after the after-school programs (Russell et al., 2010; LaFleur et al., 2011; Russell & Woods, 2012). Furthermore, students participating in quality after-school programs showed significant increases in their self-perception, self-confidence, and self-esteem (Durlak & Weissberg, 2007). After-school programs also helped improve participants' personal and social skills (Vinson & Hutson, 2014), conflict resolution skills (Reisner et al., 2004), decision-making ability, and leadership skills (Lyon, Jafri, & Louis, 2011); they also reduced problem behaviors (Vandell, Reisner, & Pierce, 2007; Durlak et al., 2010). Additionally, qualified after-school programs contribute to children's health (Mahoney et al., 2005; Huang & CREST team, 2012). Furthermore,

in terms of family and community involvement, 37 of Huang's (2016) 52 reviewed studies addressed their involvement in these programs<sup>1</sup>.

On the other hand, studies evaluating Japanese extended education emerged after MEXT introduced its After-school Classes for Children (ACC) program in Japan. Many of these studies are descriptive, only introducing initiative projects and clarifying their characteristics (OERF 2008, 2009; SRDI 2008a, 2009; Yanagisawa, 2013).

However, there are some Japanese-based quantitative studies on after-school programs' effect on children. The Systems Research and Development Institute of Japan (SRDI) clarified the positive behavior modifications and the transformed perceptions of children in after-school programs by conducting questionnaire surveys on children, parents, and coordinators (SRDI, 2008b). Other studies have looked at how these programs affected children's social and emotional development; one study found that students participating in extended education were more socially and emotionally developed than their non-participating peers (Kanefuji, 2015). However, only a few rigorous empirical studies have utilized methodologies like random sampling and randomized control testing.

Regarding teachers' perspectives, some research has been conducted concerning their assessment of children and youth in different ACC programs provided within and outside of schools in Japan (Kanefuji & Iwasaki, 2013). More than 70% of these programs were provided at schools; the remainder was provided externally (e.g., at community learning centers, children's halls, other institutions) (MEXT 2014). Based on a random sampling of public elementary schoolteachers, it was found that teachers in schools with in situ after-school programs had more positive relationships with the children and students than their counterparts with after-school programs provided outside schools (Kanefuji & Iwasaki, 2013). Even though Japanese schoolteachers are not expected to provide and instruct in these after-school programs, the results suggested that in situ after-school programs may have a positive effect on schoolteachers.

Based on the above review, it is clear that extended education's role in children's lives has been extensively researched. However, the literature rarely focused on how other stakeholders (i.e., parents, the community, schoolteachers) are affected. This observation may be attributed to researchers' assumption that other stakeholders are only inputs in the extended education system.

## Context and Methodology

### *Systems approach to analyzing and understanding extended education*

Originally, the systems approach was proposed as the General System Theory by Austrian biologist Ludwig von Bertalanffy (Bertalanffy, 1968) and his colleagues, who were economists, mathematical biologists, and physiologists. According to the general systems theory, a system is defined as a group of interacting, interrelated, or

interdependent elements that form a complex whole. Systems therefore have inputs, processes, outputs, and feedback mechanisms.

One reason we focus on extended education's impacts on schoolteachers is that we assume that they are not simply inputs in the extended education system, but are instead part of its output. Furthermore, although some studies consider extended education and its program development process as an input-process-output system model, we believe this interpretation does not account for feedback mechanisms. When we presume that extended education is a system under the systems approach, we should consider how input mechanisms may also be affected by the output and the processes. This means the input, process, and output are not static; instead, they are dynamic mechanisms whose components interact with one another.

Based on the basic characteristics of the systems approach (Nakano, 1988), we now present the fundamental premises that will be used here to analyze extended education as a system. Firstly, extended education (including after-school programs) and its planning process can be understood as an input-process-output system, and it is a cyclical open system. Secondly, if it is assumed that extended education undergoes development processes, this implies that the extended education system includes feedback mechanisms in addition to inputs, processes, and outputs. Thirdly, this study aims to analyze and clarify the relationships between each component in the extended education system, but our analyses are not meant to be used to control or manage the system, as we need to better understand the system first.

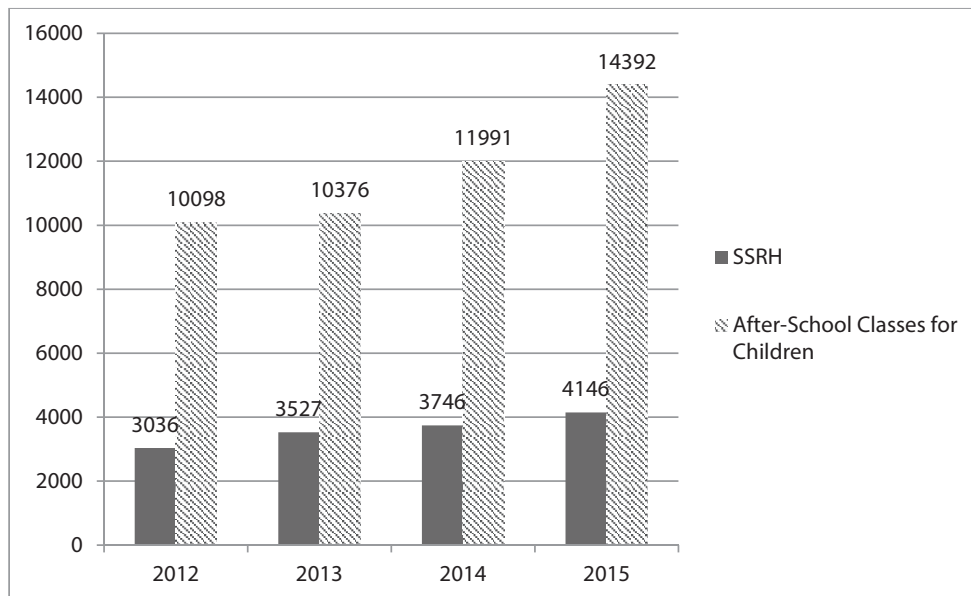
### *Rationale for selecting schoolteachers as target population*

There are two additional reasons for why we focus on schoolteachers in this study. Firstly, extended education in Japan is expected to provide improvements to students' learning environments and support based on strong cooperation between the school, the parents, and the community. As mentioned, Japanese schoolteachers are neither responsible for nor expected to direct and instruct in ACCs at their schools. ACCs are volunteer-operated (i.e., by parents, community residents) educational, sports, and cultural activities or programs that are offered to elementary and junior high school students and are predominantly provided in situ during after school hours. The parents and community residents who volunteer to facilitate these activities form an organization called the School Support Regional Headquarter (SSRH). However, despite being run by the SSRH, these activities are under the jurisdiction of the municipal government.

The ACC and SSRH systems were introduced in 2007 as part of the programs outlined in the National Educational Policy. They were designed to promote after-school activities through increasing cooperation between schools, parents, and regional residents in Japan. Financial support can be obtained from the municipal, prefectural, and national educational boards, each board providing a third of the funding. Figure 1 shows the total number of ACCs and SSRHs during 2012–2015, where both are seen to have increased<sup>2</sup>. According to MEXT statistics, 48% of public



elementary schools have ACCs and 31.9% of elementary and junior high schools have SSRHs (MEXT, 2016).



*Figure 1.* Numbers of Implementation on SSRH and After School Classes for Children in Japan

According to the 2013 TALIS survey<sup>3</sup>, Japanese schoolteachers have very difficult working conditions (OECD, 2014; NIER, 2014). Teachers in Japan have the longest total working hours and spend the most time leading extracurricular activities out of the surveyed 34 countries. Moreover, Japanese schoolteachers spend far longer hours doing office work. Their self-efficacy and job satisfaction levels are also very low compared to the averages from other participating countries. This study will therefore address this serious issue by elucidating how parent- and community-supported extended learning programs can improve the teachers' current working conditions.

### *Research Questions*

This article seeks to identify extended education's impact on schoolteachers in Japan. We investigate the differences in teachers' reactions to extended education programs that are supported by parents and the community compared to those that are not. In this study, the following three research questions will be addressed<sup>4</sup>.

1. Are there differences in schoolteachers' perceptions of cooperation between the school, parents, and the community depending on whether extended education programs are supported by parents and the community?

2. Are there differences in schoolteachers' perceptions towards their work depending on whether extended education is facilitated by parents and the community?
3. Is there a relationship between the conditions of extended education supported by parents and the community, teachers' perceptions towards their work, and teachers' perceptions of cooperation between the school, parents, and the community?

## *Method*

### Definition and use of key concepts

#### **Criteria for determining parent- and community-supported extended education programs**

Firstly, parent- and community-supported extended education is defined as systematic educational activities that support the school and the students; these activities are mainly provided by parents and the community residents at school. The current conditions of extended education supported by parents and the community at each school are surveyed from two aspects. First, we asked teachers if there was a SSRH at their school; second, we asked teachers if there were actual parent- or community-run activities held at their school. We split these activities into twelve categories, as shown in Table 1. We also added an additional factor, the supporting score from parents and the community, which is derived from the sum of frequencies collected by using multiple answers in Table 1's categories.

*Table 1.* Supported activities provided by parents and community residents at school

1	watching and guiding the children to and from school for safety control
2	maintaining the gymnastics hall and athletic ground
3	operating and administrating the library room
4	supporting activities in school sports festival and school trip
5	reading to children during before school at classroom
6	providing a wide variety of after-school programs
7	maintaining flowerbeds at school
8	point rating drills during before and after school with children
9	speaking as a guest at regular classes
10	educational leading as a member of team teaching
11	participating to meetings as a member of the community school management meeting
12	other activities to support children and school at school



Table 2 shows the current conditions of extended education supported by parents and the community in this study. Firstly, 26.1% of schoolteachers work in schools with a SSRH. The descriptive statistics of the supporting score from parents and the community is shown in

*Table 2.* Teachers who are working at school that has a SSRH in this study

	Teachers who are working at school with SSRH	Teachers who are working at school with no SSRH	NA	Total
n	316	682	215	1213
%	26.1	56.2	17.7	100.0

Table 3, and the average score is approximately 4.6. This means that schools are supported by parents and the community with, on average, about five of the twelve surveyed categories of support activities.

*Table 3.* Descriptive Statistics of ‘Supporting Score from Parents and the Community’

N	Minimum	Maximum	Mean	SD
1213	1.00	11.00	4.5727	1.83341

### Scale measuring teachers’ perceptions towards their work

Teachers’ perception of their work was examined through 20 Likert scale items. These items were created and revised with reference to the “Teachers Perceptions Survey” (Recruit Management Solutions, 2007). The items were selected and used to develop a scale for examining teachers’ perceptions of their work through factor analysis (Table 4).

The protocol adopted for the factor analysis was to use maximum likelihood estimation and to rotate the matrix of loadings to obtain independent factors. More specifically, the promax (oblique) rotation was used. The Kiser-Meyer-Olkin Measure of Sampling Adequacy and Bartlett’s Test of Sphericity showed that the factor model in this study is appropriate and that the items are factorable (i.e., KMO = .872, Bartlett’s test’s  $p < .000$ ,  $df = 105$ , approximate  $\chi^2 = 9410.910$ ). Table 4 shows the results of an oblique rotation of the solution. It yielded a four-factor solution with a simple structure (i.e., factor loadings were  $> .40$ ).

As shown in Table 4, six items were loaded onto Factor 1. These six items are all related to teachers’ feelings of congeniality and reward with respect to their job. This factor was named Feel Rewarding. The seven items that were loaded onto Factor 2 are related to teachers’ feelings of being overloaded at work. This factor was named Feel Burdened. The five items that were loaded onto Factor 3 are related to the teachers’ positive feelings about their job in terms of working with their colleagues at their current school. This factor was named Feel Positive Towards Colleagues. The items loaded onto Factor 4 are related to feeling stuck in a rut and monotonous when working. This factor was named Feel Stuck.

**Table 4.** Factor analysis results of teachers' perceptions towards their work (Maximum-likelihood Method, Promax Rotation, Eigenvalues of 1 and above)

	No. of items	Cronbach's $\alpha$	Feel rewarding	Feel burdened	Feel positive towards colleagues	Feel stuck
1. I can bring out my best in my current job.	6	0.876	.856	-.034	-.031	.081
2. I am suited for my current job.			.824	-.109	-.117	.124
3. I can shine in my current job.			.806	-.089	-.022	.158
4. I am proud of my current job.			.691	.095	.088	-.072
5. I feel my current job is rewarding.			.610	.076	.105	-.193
6. I feel I am developing as a person through my current job.			.587	.141	.106	-.181
7. The job is too busy and my life revolves around the job.	7	0.827	.055	.827	-.056	-.030
8. The job is too busy to carry on in the longer term.			-.334	.745	-.081	.094
9. There is too much responsibility for me in my current job.			-.102	.632	.088	.100
10. I feel mentally exhausted by conversing with pupils/students or their parents.			.063	.614	.012	-.123
11. I often stay at work after hours and work overtime.			-.072	.565	-.005	.094
12. I cannot handle the job with my previous experience and knowledge.			.108	.557	-.084	-.121
13. I often bring work back home.			-.167	.462	.144	.098
14. I am lucky with work colleagues at school.	5	0.455	-.059	.024	.950	.047
15. I enjoy working with fellow teachers and staff.			.068	.018	.889	.069
16. I often learn from other teachers and staff.			-.020	.095	.795	-.033
17. I feel lucky to be working at my current school.			.249	-.086	.547	.009
18. I am often troubled by relationships at work (reverse item).			.115	.272	-.502	.091
19. The current job is monotonous and I don't find it challenging.	2	0.781	-.003	-.056	-.021	.830
20. I feel I am in a rut as there is too much repetition.			-.091	.067	.049	.816
	Factor contribution		5.894	2.428	1.692	1.009
	Cumulative contribution ratio		29.47%	41.61%	50.07%	55.12%
Correlation coefficients among factors			1	2	3	4
	1		1.00	-.352	.477	-.478
	2			1.00	-.201	.224
	3				1.00	-.456
	4					1.00

Scale measuring teachers' perceptions on cooperation between the school, parents, and the community

To analyze the teachers' perceptions of cooperation between the school, parents, and the community, this study established seven survey items and analyzed them using factor analysis to develop a scale (see Table 5). More specifically, the method used was the same as the one used for creating the scale for teachers' perceptions of their work. The precision of the analyses' results was good (i.e., KMO = .730, Bartlett's

test's  $p < .000$ ,  $df = 21$ , approximate  $\chi^2 = 1965.836$ ). It yielded a two-factor solution with a simple structure. Table 5 shows the results of the solution.

Four items were loaded onto Factor 1. These four items are related to teachers' positive feelings and anticipation in relation to the effects of cooperation between the school, parents, and the community. This factor was named Regarding Cooperation. The three items that were loaded onto Factor 2 were related to the teachers' negative feelings in relation to cooperation between the school, parents, and the community. This factor was named Rejecting Cooperation. Using these scales, I analyzed the relationship between teachers' perceptions of their job and those of cooperation between the school, parents, and the community, as well as the extended education supported by parents and the community.

*Table 5.* Factor analysis result of teachers' perceptions on cooperation among school, parents and the community (Factor Analysis with Maximum-likelihood Method, Promax Rotation, Eigenvalues of 1 and above)

	# of items	Cronbach's α	Regarding Cooperation	Rejecting Cooperation
1.Cooperation with parents and community has good effects to promote children's academic development	4	0.730	0.837	-0.016
2. Cooperation with parents and community has good effects to promote children's norm consciousness.			0.786	0.056
3. Cooperation with parents and community is necessary for school administrations.			0.743	-0.025
4. Cooperation with parents and community aid in lightening teachers' overload of job.			0.356	0.01
5. Human resources other than teachers are needed for liaison and coordination to cooperate with parents and community	3	0.579	0.084	0.735
6. It is not essentially teachers' work to do liaison and coordination with parents and community.			-0.222	0.542
7. It is difficult to secure time for cooperation with parents and community.			0.123	0.457
	Factor Contribution		2.08	1.04
	Cumulative contribution ratio		29.66%	44.53%
Correlation coefficients among factors			1	2
	1		1.000	.47
	2			1.000

## Data and Sample

The data was collected by the National Elementary School Teacher's Survey, which was distributed to elementary school teachers as a questionnaire in 2012 (Kanefuji, 2012). Table 6 shows the anticipated number of samples, the number of valid responses, and the survey response rate. Ultimately, 1,213 samples were used in the subsequent analyses. The survey period and the sampling method were as follows:

Survey period: From September 24–October 23, 2012

Survey method: Questionnaire research by mail

Sampling method: Out of 21,121 state schools teachers throughout Japan, 600 schools were selected using a stratified two-stage random sampling method.

*Table 6.* Samples and Valid Response Rate of the Survey

	Planned # of Samples	# of Valid Responses	Valid Response Rate
# of School	600	273	45.5%
# of Elementary School Teachers	3,000	1,213	40.4%

The stratification was done using the number of regions and the total number of students per school. The classification number of regions was twelve and that of the total number of students was two. Five copies of the questionnaire were sent to each school. The questionnaire only targeted teachers in charge of classes. Table 7 shows the baseline attributes of the samples. The male to female ratio was about 40:60, and the proportion of each age group was about 20% to 30%.

*Table 7.* Baseline attributes of the sample

Age & Gender	Real number	%
Age (& Grade): 30 years old less or equal	194	16.0
31–40 years old	232	19.2
41–50 years old	409	33.8
51–60 years old	373	30.8
61 years old or more	2	0.2
Gender: Male	454	37.4
Female	751	61.9
N/A	9	0.7
Total	1,213	100.0

## Results

### *Effects of SSRHs on schoolteachers' perceptions of their work*

Table 8 shows the results of the cross-sectional analyses between the presence of SSRHs at schools and the teachers' perceptions of their work. The top scores were from teachers who had a SSRH at their school, while the bottom ones were from those who did not. The percentage represents the positive responses ("apply very much" and "somewhat apply").

It is evident that the presence of SSRHs clearly affected teachers' perceptions of their work. Teachers whose schools have SSRHs felt significantly less burdened by extended education activities, which are run by parents and the community. These teachers also perceived that the volunteer-run activities were very active. Note that the above differences were all statistically significant.

*Table 8.* Relationship between the Presence of SSRHs at School and Teachers' Perceptions of their Work

	National ES Teachers	Effect Size
1. Feel less burden about after-school hours involving volunteer activities of community residents	50.6% *** 35.1%	.151***
2. Feel that intercommunication is increasing at their school	77.0% ** 68.3%	.093**
3. Volunteer activities supporting their school are very active	76.3% *** 65.6%	.158***

Note: 1. % represents the positive responses ["apply very much" and "somewhat apply"]

2. The top scores are the responses of the teachers who have a SSRH at their school, and the bottom ones are those of teachers who do not have a SSRH at their school.

3. \*\*\*  $p < .001$ , \*\*  $p < .05$  Effect Size=Cramer's V

### *Correlation coefficients between variables*

Table 9 shows the results of the correlation coefficients between variables. Factors of teachers' perceptions towards their work and factor scores of teachers' perceptions on cooperation between the school, parents, and the community were mutually correlated. The factors of Feel Rewarding and Feel Positive Towards Colleagues in teachers' perceptions towards their work were positively correlated with Regarding Cooperation, and negatively correlated with Rejecting Cooperation. In contrast, Feel Burdened and Feel Stuck were positively correlated with Rejecting Cooperation, and negatively correlated with Regarding Cooperation.

The correlations between teachers' perceptions and whether extended education activities were operated by other educational stakeholders show that the supporting scores by parents and the community were positively correlated with Feel Reward-

ing and Regarding Cooperation, so thus teachers' perceptions also have positive correlations with the existence of SSRHs.

*Table 9.* Pearson's correlation coefficients among variables

		1	2	3	4	5	6	7	8
Teachers' Perceptions towards their work	1 Feel Rewarding	1	-.395**	.520**	-.540**	.262**	-.075*	.031	.078**
	2 Feel Burden		1	-.224**	.264**	-.014	.235**	.002	.018
	3 Feel Positive t/w Colleagues			1	-.512**	.272**	-.090**	.008	.055
	4 Feel Stuck				1	-.226**	.160**	.019	-.051
Teachers' Perceptions on cooperation among school, parents and community	5 Regarding Cooperation					1	.019	-.026	.139**
	6 Rejecting Cooperation						1	.080*	-.007
Conditions of extended education supported by parents and community	7 Existence of SSRH							1	.197**
	8 Support Score by Parents & Community								1

\*\*  $p < .01$ , \* $p < .05$

### *Relationships among variables: The results of t-test for paired samples*

Tables 10 to 12 show the results of the paired sample t-tests. In these analyses, each score is divided into three groups using the tertile value. The groups with the lowest and the highest scores were used to compare each t-test. The results show statistically significant differences between the factor scores of teachers' perceptions towards their work, the scale scores on regard for cooperation, and the support scores by parents and the community.

Teachers who feel rewarded at work and have positive feelings towards their colleagues had high scale scores for Regarding Cooperation. On the other hand, teachers who scored high on Feel Burden and Feel Stuck also scored high on Rejecting Cooperation. Furthermore, teachers who received high supporting scores by parents and the community scored high on Regarding Cooperation. There were no

differences in the scores for Rejecting Cooperation between well-supported teachers and less supported teachers

*Table 10.* The t- test for paired samples: Teachers' Perception towards their work and that of on cooperation among school, parents and the community 1

Factor Scores of Teachers' perceptions towards their work	Scale Scores of Regarding Cooperation	N	mean	SD	SEM	t
REGR factor score 1:	Group of the lowest scores	524	-.2161657	.93970592	.04105124	-7.151***
Feel Rewarding	Group of the highest scores	649	.1742242	.92131674	.03616485	
REGR factor score 2:	Group of the lowest scores	524	-.2517167	.99778022	.04358823	-8.259***
Feel Burden	Group of the highest scores	649	.2007109	.87675174	.03441552	
REGR factor score 3:	Group of the lowest scores	524	-.0109293	.88684723	.03874210	-.462n.s.
Feel Positive Towards Colleagues	Group of the highest scores	649	.0139072	.93705330	.03678256	
REGR factor score 4:	Group of the lowest scores	524	.1955641	.90004416	.03931861	6.692 ***
Feel Stuck	Group of the highest scores	649	-.1537363	.87942812	.03452057	

Note: Scale Scores are divided to three groups by using tertile value. The groups of the lowest and the highest are used in the t test. \*\*\*  $p < .001$

*Table 11.* The t- test for paired samples: Teachers' Perception towards their work and that of on cooperation among school, parents and the community 2

Factor Scores of Teachers' perceptions towards their work	Scale Scores of Rejecting Cooperation	N	mean	SD	SEM	t
REGR factor score 1:	Group of the lowest scores	530	.0722989	.95066244	.04129414	2.312*
Feel Rewarding	Group of the highest scores	629	-.0570099	.94640049	.03773546	
REGR factor score 2:	Group of the lowest scores	530	.1059304	.93759803	.04072666	3.362***
Feel Burden	Group of the highest scores	629	-.0837561	.97270678	.03878436	
REGR factor score 3:	Group of the lowest scores	530	-.1855346	.86921541	.03775630	-6.341***
Feel Positive Towards Colleagues	Group of the highest scores	629	.1510586	.92560146	.03690615	
REGR factor score 4:	Group of the lowest scores	530	-.1244291	.90376561	.03925707	-4.435***
Feel Stuck	Group of the highest scores	629	.1108640	.89638952	.03574139	

Note: Scale Scores are divided to three groups by using tertile value. The groups of the lowest and the highest are used in the t test. \*\*\*  $p < .001$ , \*  $p < .05$

*Table 12.* The t-test for paired samples: Teachers' Perception on cooperation among school, parents and community and Conditions of extended education supported by parents and the community

Scale Scores of Teachers' Perceptions on cooperation	Supporting Score from Parents & the Community	n	mean	SD	SEM	t
Scale Scores of Regarding Cooperation	Group of the lowest scores	598	13.2525	1.90779	.07802	-3.048**
	Group of the highest scores	602	13.5797	1.81080	.07380	
Scale Scores of Rejecting Cooperation	Group of the lowest scores	589	8.7453	1.54952	.06385	0.629n.s.
	Group of the highest scores	596	8.6896	1.49934	.06142	

Note: Scale Scores are divided to three groups by using tertile value. The groups of the lowest and the highest are used in the t test. \*\*\*  $p < .001$

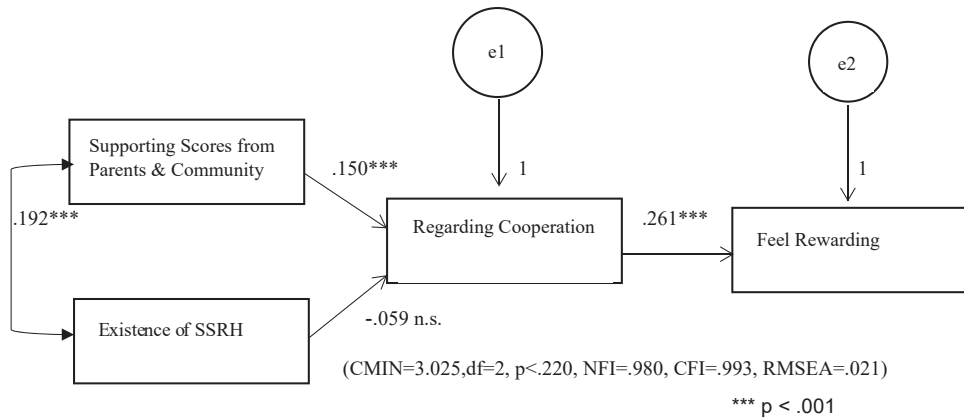
### *Pass analyses between variables*

We conducted pass analyses to verify the structure between the variables. Pass analysis is a component of structural equation modeling (SEM). By using this method, we can assume a causal model and verify the relationships between variables structurally, in addition to evaluating the models' adequacy with the data.

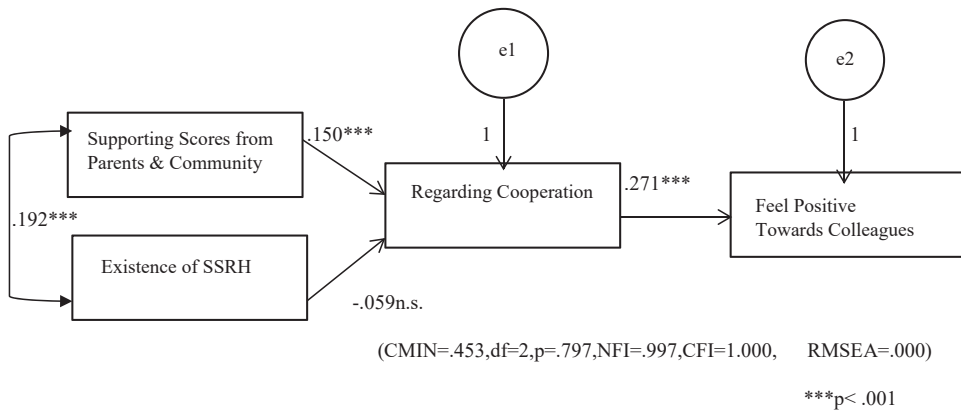
Figures 2 to 4 show the results of pass analyses between the three kinds of variables we focused on in this study. In these analyses, we made very simple causal models, which demonstrated that support from parents and the community affected teachers' perceptions of the cooperation between the school, parents, and the community. In addition, their perceptions affected the Feel Rewarding, Feel Positive Towards Colleagues, and Feel Stuck factors of how they felt about their work. That is to say, we assumed that the teachers' perception of cooperation functions as an intervening variable between the conditions of extended education and their perception towards their work.



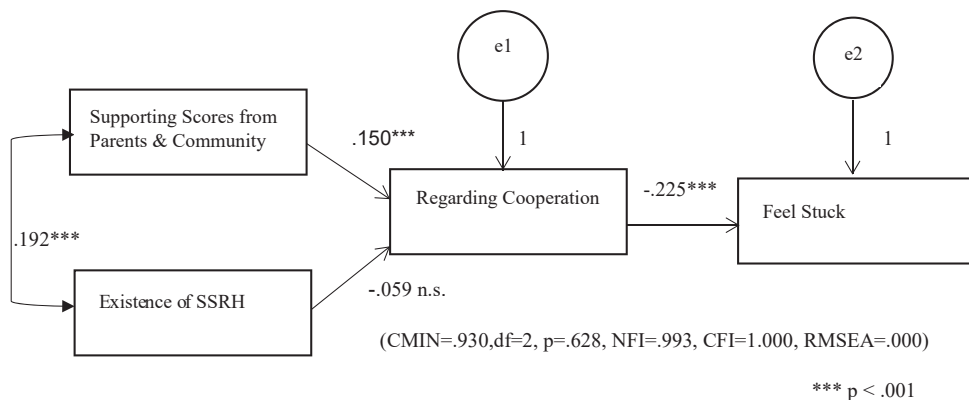
*Figure 2. A pass analysis among variables: A causal model among Conditions of extended education, Teachers' Perception on Cooperation, and Teachers' Perception towards their Work: Feel Rewarding*



*Figure 3. A pass analysis among variables: A causal model among Conditions of extended education, Teachers' Perception on Cooperation, and Teachers' Perception towards their Work: Feel Positive Towards Colleagues*



*Figure 4.* A pass analysis among variables: A causal model among Conditions of extended education, Teachers' Perception on Cooperation, and Teachers' Perception towards their Work: Feel Stuck



According to the results of the pass analyses, the teachers' perceptions on Feel Rewarding, Feel Positive Towards Colleagues, and Feel Stuck were all well-explained by the causal models. The fit indexes (i.e., CMIN, NFI, CFI, RMSEA) were all acceptable. These models were thus considered to fit the data very well.

## Discussion

This study focused on extended education supported by parents and the community and clarified its effect on Japanese schoolteachers. From the analyses, we found several relationships between the variables. This study provides a practical and an academic contribution.

The conditions of extended education supported by parents and the community have resulted in considerable differences in schoolteachers' perceptions towards their work and towards cooperation between the school, parents, and the community (thus verifying research question 3). Well-supported teachers thought more positively about cooperation between the school, parents, and the community (thus verifying research question 1). Moreover, these teachers also felt more rewarded, had more positive relationships with colleagues, and were less burdened at work (thus verifying research question 2). This means that extended education supported by parents and the community had positive impacts on schoolteachers' perception towards their work. All three research questions in this study were therefore verified.

The results also suggested that the presence of SSRHs positively affected teachers' perceptions towards their work. Even though this effect was not statistically significant in the pass analyses, it may still serve to increase the number of volunteer-operated activities. Furthermore, as schoolteachers with a SSRH at their school felt less burdened by after-school activities (Table 8), this would suggest that teachers' after-school workloads and work hours in general were also reduced by SSRHs.

The involvement of parents and the local community in these after-school programs, in addition to SSRH activity, may therefore improve schoolteachers' working environment in Japan. Thus, from a practical viewpoint, it would be beneficial to increase the number of supported extended education programs and SSRHs across schools nationwide.

At the same time, it should be noted that some schoolteachers rejected cooperation with parents and community residents (Table 5). One possible explanation for this is that schoolteachers may fear that cooperation with these volunteers will take more time and that additional human resources (other than the teacher) are needed to ensure positive cooperation (Table 5). Some schoolteachers may also fear that they will lose classroom control and authority through the cooperative process. Therefore, it is very important to educate teachers to realize that working with parents and the community in extended education does not increase their workload, and that it will instead provide various benefits, such as reducing their after-school workload.

Although after-school programs and in-class curriculums are not directly connected, it is important to recognize that Japanese schoolteachers generally spend more time than their international peers leading extracurricular activities (7.7 hours per week versus 2.1 hours; see OECD, 2014). Thus, by reducing their after-school workload, teachers will experience less stress and will be able to focus more on their in-class activities, which may increase their overall productivity and job satisfaction. Volunteer-supported extended education programs are therefore valuable in that they indirectly improve teachers' working conditions.

## Conclusion

Based on these results, we may also say that extended education is an open system that is affected by both internal and external factors; in addition, each component in the system interacts with the others. Therefore, in evaluating extended education programs, it is necessary to further examine the various factors and components in the system. The effects on schools and teachers as well as on parents and local residents should be analyzed more extensively, in addition to performing a detailed examination of their effect on children and youth. Furthermore, when examining extended education as a system, researchers need to keep in mind that each component is not static and independent, but instead makes up a system with mutual interactions.

By accumulating more research, we will gain a more holistic understanding of extended education and clarify its effects. This means that various contexts and perspectives need to be discussed and evaluated through future research. We believe these evaluation studies on extended education can also enhance the quality of evaluation studies as a whole.

While this study adds to the literature on parent- and community-supported extended education and its impact on schoolteachers, several limitations should be noted. First, while we analyzed data collected by using a random sampling method, it surveyed only elementary schoolteachers in Japan and did not include teachers at other stages of education (e.g., middle and secondary schoolteachers). Different

results may have been found by using data on schoolteachers from different stages. A second limitation is that this study does not account for the supported activities' quality because this data could not be collected through our questionnaire survey. Thus, it is possible that the quality of the parent- or community-supported activities may have significantly different impacts on schoolteachers. A third limitation is that this study used data collected from cross-sectional research. If we want to understand extended education in more detail as a system, we must analyze it with longitudinal data. Future studies that use these methods and provide exhaustive analyses will contribute to the academic progress in this field of study.

## Endnotes

1. In England, some studies have reported that the relationship between parents' interventions and children's achievement scores are unclear, even though many studies strongly support this relationship (Dyson & Kerr, 2016, pp. 94–96).
2. The activities are conducted based on a national educational policy derived from an amendment to the Fundamental Law of Education in 2008. Act 13 was established with the purpose of promoting cooperation between schools, parents, and communities in educational activities.
3. Japan participated in TALIS (OECD, TALIS: Teaching and Learning International Survey) in 2013.
4. This study project was conducted under a grant from the Japan Society for the Promotion of Science (JSPS). Research head: Kanefuji, F., Research No. 23653272, (2011–2013).

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# Out-of-School Time and Youth Development: Measuring Social-Emotional Development to Inform Program Practice

*Gil Noam & Bailey Triggs*

## Introduction

There are as many opinions about the role of youth development programs that operate outside of school as there are names for it: after-school, extended day, extended time education, expanded learning, free-standing programs, and out-of-school time (OST) are a few of the most popular terms for this valuable youth development time. (For the purposes of this chapter, we'll refer to this time as OST.) While there continues to be a rich, interesting debate about the role of OST across the world – is it supplementary, or in the case of educational gaps, compensatory to the existing in-school educational curricula or should it consist of free-standing programs that operate independently of the country's school system? – this piece will leave the debate over OST's relationship with formal education systems to others. Instead, we will focus on questions central to our work: How can we measure the impact OST programs has on youth development outcomes and how can we use those outcomes to better inform OST programming in a way that will benefit the youth the program is currently serving, not only future participants years down the line?

With all the expectations put on OST, we argue for focus on youth development as a core component of a successful OST program based on ample research that shows OST plays an important role in youth development and that impact often extends to in-school performance (Cooper, Valentine, Nye, & Lindsay, 1999; Darling, 2005; Fredericks & Eccles, 2006). A meta-analysis of OST programs in the United States showed that participants in programs that addressed personal and social skills demonstrated significant increases in their self-perceptions and bonding to school, positive social behaviors, school grades and levels of academic achievement, and a significant reduction in problem behaviors (Joseph A. Durlak, Weissberg, & Pachan, 2010). Given this research support, the measurement of youth outcomes is becoming a growing priority in the field of OST. While programs and systems may cite a variety of reasons for measuring youth social-emotional skills and beliefs, a review of the literature around expanded learning systems grouped these reasons into three categories: policy supports, program improvement, and evidence (Moroney, Newman,

Smith, McGovern, & Yohalem, 2014). While limited funding for OST programs in the U.S. allows government and private funders to exert additional pressure on programs to connect their work with measurable outcomes, we believe this interest in connecting youth developmental outcomes with OST program quality is applicable to an international audience.

## Connecting OST to youth development: The Clover Model

OST has a distinctive role to play in youth development that gives it a pedagogic value distinct from in-school education. For the purposes of this paper, in-school education refers to formal, curricula-based education that is focused on academic outcomes. OST is the incubator of new practices and new testing grounds and thrives in a low accountability and low threat environment. While the structure of OST programs lends itself naturally to fostering positive relationships between adults and youth and other factors that lead to positive youth outcomes (J. A. Durlak & Weissberg, 2007; Rhodes, 2004), we believe OST programs would benefit from a more intentional connection between research on OST outcomes and youth development theory. In this section we will give an example of how theory can connect to and inform practice in OST.

Our developmental process theory (DPT), called “The Clover Model of Youth Development” (Figure 1) interconnects adolescent psychopathology with social-emotional development and resilience, reframing problem behaviors as developmental imbalances and defining resiliency as balanced social-emotional development (Malti & Noam, 2008, 2009, 2016; Noam, 1996; Noam & Triggs, 2016).



*Figure 1.* The Clover Model of Youth Development

The Clover Model was developed based on two decades of comparative research of various child and adolescent developmental models. It incorporates attachment, functionalist, and social-cognitive developmental theory from Bowlby, Erikson and Piaget as it is applied to risk and resilience and normative development (Bowlby, 1969; Erikson, 1950; Piaget, 1954). For more information on the process of developing the Clover Model, Noam, Malti, and Karcher present a summary of this comparative research (Noam, Malti, & Karcher, 2013). The goal in the development

of the Clover Model was to seek the minimum dimensions necessary to understand the needs and desires of children and adolescents and to provide them with the right support and learning opportunities that engage and satisfy these needs.

Tested and refined through clinical and classroom observations, the Clover Model is defined by four domains or “leaves,” each reflecting a particular kind of development (Malti & Noam, 2009). These leaves represent four key components of healthy adolescent development: active engagement, assertiveness, belonging, and reflection. We use the image of a clover and call these dimensions and their interactions “leaves” because they do not follow each other sequentially, but are each present at all points of development. The leaves are not distinct entities; rather, they overlap like a Venn diagram. Active engagement represents the desire to actively and physically engage with the world through the body; assertiveness represents the development of a voice and desire to express wants and needs; belonging represents a desire to build a connection with peers and adults; and reflection represents a desire for self-reflection and identity exploration.

While all leaves are present throughout development, there are key times of specialization in each leaf based on the youth’s developmental progress. Connection to the physical world through active engagement begins at birth and remains the dominant focus through age 5. In middle childhood (ages 6–10), assertiveness begins to take prominence, with youth learning how to assert their own voice and autonomy in relationships. In early adolescence (ages 11–15), the belonging leaf becomes a major focus of energy when youth strive to make friends, explore various identities and personas and try to find where they fit in relation to others. Moving into full adolescence (age 16 and beyond), the focus often turns inward toward reflection and includes an increased interest in meaning-making, observation, insight, and self-awareness.

In addition to describing aspects of youth development individually, the Clover Model leaves also work in conjunction as “partner leaves” help youth who are overly specialized in one or more Clover domains to find balance. The Clover Model domains can also be divided into internalizing and externalizing hemispheres (Noam, Malti, & Guhn, 2012). Active engagement and assertiveness deal with what we call “externalizing” behaviors and cognitions: thoughts and behaviors that are not only observable to the outside world, but are in fact directed from the individual toward the outside world. For example, active engagement behaviors would include physical activity (seen as disruptive classroom behavior when negatively expressed) and assertiveness would include speaking your mind and presenting options (seen as argumentativeness or opposition to authority when negatively expressed). The belonging and reflection leaves describe “internalizing” behaviors and cognitions: thoughts and behaviors that are directed within a person and not necessarily obvious to the outside world. Feeling like you belong in a group or pondering the meaning of the world are activities that happen within a youth’s head and are more difficult to see from the outside. Internalizing struggles can be just as harmful to young people as the externalizing behaviors of acting out and arguing, but are more likely to go untreated and unresolved because they are not as evident to those working with the youth.

The Clover Model was designed not only to explain youth behavior in terms of developmental process, but also to be applied as a guide for those working with

youth to better understand what approaches and practices will best suit the developmental needs of a particular youth. To this end, the model encourages facilitators to use youth's strengths in a particular domain to cultivate their less developed competencies and in turn, to enhance their overall balance. For example, instead of focusing on managing the behavior of those with strengths in active engagement to be less active, the Clover Model encourages the support of a youth's innate strengths by allowing for activities that include physical movement that also include work on self-regulation and reflection on their actions. Working to maintain a balanced Clover is important for the development of social-emotional competencies, which are linked to academic success, positive peer and adult relationships, and mental health (Oberle, Schonert-Reichl, Hertzman, & Zumbo, 2014; Ursache, Blair, & Raver, 2012).

## Measuring Youth Development: The Holistic Student Assessment

Research has found that developmentally-sensitive assessments can improve the use of intervention strategies that fit the developmental needs of children and adolescents (Malti, Chaparro, Zuffianò, & Colasante, 2016; Weisz, 1997). While the Clover Model can serve as a framework for OST facilitators to better understand the developmental needs of the youth they serve, observation of behaviors alone is often insufficient in identifying social-emotional needs, particularly for youth who deal with more internalizing challenges. The use of a psychometrically strong data-creating tool is an important step to identify the social-emotional needs of young people for specific prevention practices (Malti, Zuffianò, & Noam, 2017). In addition to collecting individual data, systematic assessments can also provide information on strengths of a diverse group of children in a classroom (or an entire community) that might not be easily detected without a data-driven approach. In this section, we will discuss how an assessment tool based on a youth development model can provide data to drive decision-making within OST programs.

The impetus for the development of the Holistic Student Assessment (HSA), a youth social-emotional self-report tool, was the recognition that traditional psychological assessments were often focused on risk factors in youth such as depression, aggression, and anxiety. While these risk factors are important, they often neglect contextual risk factors and the existence of supportive relationships in relation to individual development and risks (Malti, Liu, & Noam, 2010). The theoretical starting point for the HSA is the Clover Model of Youth Development (Malti & Noam, 2009). It is based on previous research and on the Resilience Inventory developed by Noam and Goldstein (1998) and Song (2003). The HSA measures resiliencies that align with Clover's four leaves (see Table 1).

*Table 1.* HSA Subscales as Applied to The Clover Model

Clover Model	HSA Subscale	Definition	Sample Item
Active Engagement	Action Orientation	Engagement in physical and hands-on activities.	I like being physically active and moving my body.
	Emotion Control	Self-regulation of distress and management of anger.	I react to things so quickly I get in trouble.
Assertiveness	Assertiveness	Confidence in putting oneself forward and standing up for what one believes.	I defend myself against unfair rules.
Belonging	Empathy	Recognition of other's feelings and experiences.	I like to help people with their problems.
	Trust	Perception of other people as helpful and trustworthy.	I trust other people.
Reflection	Reflection	Inner thought processes and self-awareness, and internal responsiveness toward broader societal issues.	I try to understand the world I live in.
	Optimism	Enthusiasm for and hopefulness about one's life.	I have more good times than bad times.

In 2012, the HSA's psychometric properties were evaluated and the results of that study lent empirical support to the HSA as a valid measure of children's and adolescents' resiliencies (Noam et al., 2012).

## HSA Data Analysis and Reporting

The Clover Model portion of the HSA is 28 questions that can be completed at the beginning of any OST program. Collected data can be analyzed and returned to a program in as little as a few days so that programs can get a sense of the social-emotional strengths and challenges of their participants at the beginning of the program. In addition to a basis in the Clover Model, HSA results are mapped to a three-tier intervention pyramid that is based on the public health model (Frieden, 2010) that has been adapted by educators to determine the support need of a school or OST population (U.S. Department of Education, 2010). The pyramid provides a simple way to display the level of intervention each participant in a program may need, with those in the top smallest percent of the pyramid requiring the highest support need and the larger base of the pyramid benefiting from activities that promote social-emotional competencies throughout the program. The support need pyramid is the basis for how we organize and report individual HSA data to OST programs and is the primary indicator for assessing which youth need additional support. Placement on the pyramid is determined by the youth's strengths and challenges as self-reported in the HSA when their responses are normed against our database of students of similar age and gender. After data collection and processing, the results of the HSA were shared with OST providers via

individual “HSA Portraits” (see Figure 2) and an interactive Excel-based “HSA Dashboard” as part of the data interpretation session (see Figure 3).

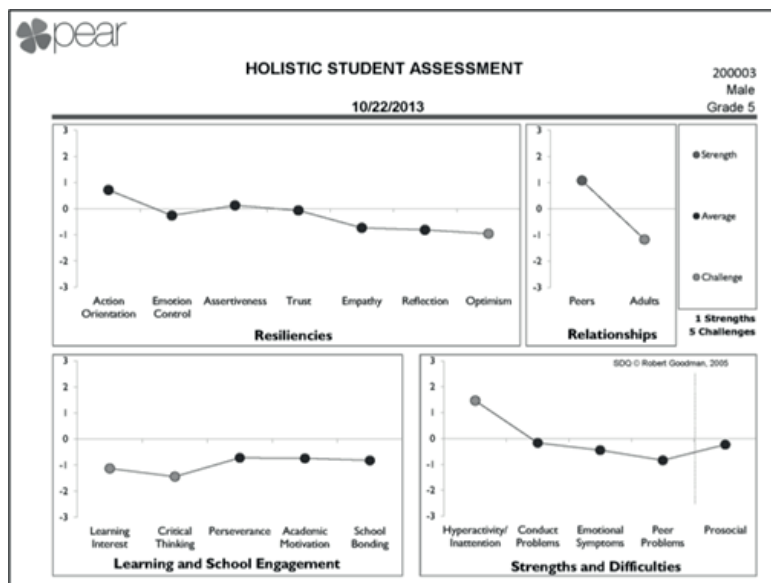


Figure 2. Sample HSA Individual Portrait

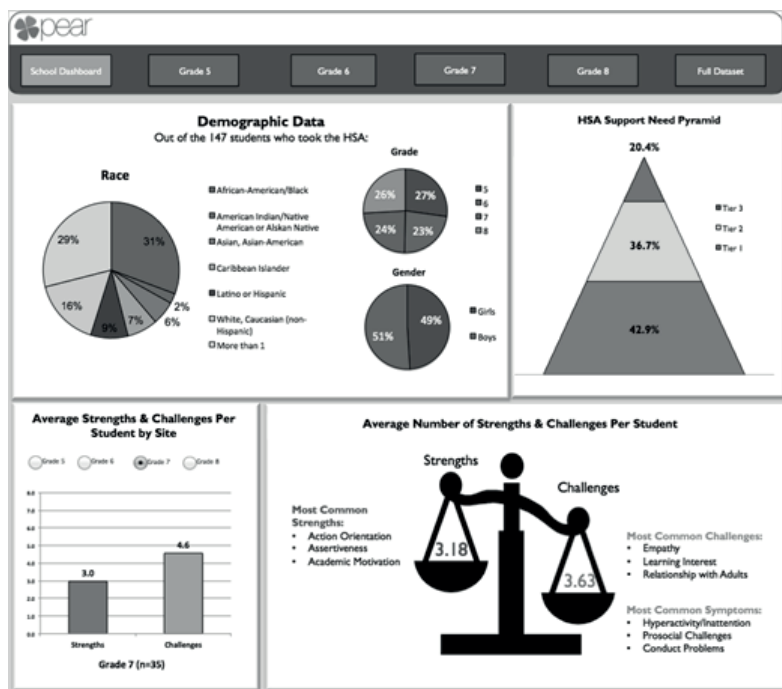


Figure 3. Sample HSA Dashboard cover page

The information provided by the HSA is intentionally designed to be simple for OST providers to use and interpret. In addition to data reporting at the individual and group levels, considerable training support is provided by The PEAR Institute's research and coaching staff to support the survey administration and interpretation. By being able to review participant data at the individual and group levels, OST providers can make more informed decisions on how to mentor and support individual students as well as make decisions about which interventions and activities may benefit the larger group.

### *Moving from Data to Action: Intervention Groups and Professional Development*

Now that we've traced the connection from how a youth development theory can inform a social-emotional assessment for OST programs, we must address the question of how to use those outcomes to better inform OST programming in a way that will benefit the youth the program is currently serving. A shift in how data is viewed by OST programs, networks, and funders is an important first step. With student self-report data available at the start of the program, OST providers will have important information they can use to make decisions about how to modify or increase programming to better meet the needs of their current participants. In this section we'd like to share an example of how youth development theory-based curricula can be used by a program in direct response to student need as expressed by data collected from the HSA.

To more fully support the Clover Model framework and the HSA, The PEAR Institute developed five small-group curricula that are tailored to each of the potential Clover Model imbalances described by the model and identified by the HSA. These Clover Groups were initially designed for youth who demonstrated an imbalance in their Clover who could benefit from a small group intervention that supported their strengths while addressing their challenges. These groups can also be expanded to benefit a general population, as developing social-emotional competencies is important and beneficial for all youth (Centers for Disease Control and Prevention, 2014). The overarching goals of these groups are to:

- Build youth's social-emotional competencies with an emphasis on active engagement, assertiveness, belonging and reflection
- Prevent the development of problem behaviors by increasing youth's competencies and positive relationships with adults
- Support youth's ability to thrive in their academic and social environment

For more information on focus of each of the five Clover Groups, see Table 2.



Table 2. Clover Groups Descriptions

Clover Model	Clover Group	Description
Active Engagement	Ready, Set, Action	This group engages youth by capitalizing on their natural desire to be moving, utilizing hands-on activities to help youth reflect, improve concentration, and control impulses. Each activity can be facilitated to help students feel part of a caring community, express themselves productively, and understand the importance of reflection in acquiring new knowledge.
Assertiveness	Photo Justice	This group engages natural leaders who can speak their minds and act autonomously, but at times struggle to express their ideas in productive ways. It provides a forum where young people's passions and opinions can be channeled through a positive form of expression. It encourages individual and collective voice and empowerment through photography.
Belonging	StrongLinks – Female	This group is designed for females who have a strong focus on social connection and relationships, but are sometimes at risk of sacrificing self-expression. Activities include expressive arts and reflective projects including journaling, media literacy, and arts and crafts. It provides adolescent girls opportunities for safe expression of ideas, values, and beliefs while connecting with peers.
	StrongLinks– Male	This group is designed for males who have a strong focus on social connection and relationships, but are sometimes at risk of sacrificing self-expression. The group activities allow adolescent boys to assert their own individuality and voice through drumming, drama, and journaling.
Reflection	Reflections	This group ( <i>currently in development</i> ) is designed for youth who are overly specialized in reflection, thinking, and perfectionism. It will focus on digital storytelling, building on students' interests in biography, self and identity.

Successfully implementing these groups, which typically run for 12 sessions for 50 minutes a session, requires two facilitators who have experience in youth development, mental health, or education that have been trained in the Clover Model and group facilitation. To help support programs that are interested in running a Clover Group, The PEAR Institute has created a Clover Group certification program that includes orientation around the Clover Model, peer coaching around group facilitation best practices, and video or in-person observation and feedback. Once a participant completes the Clover Group certification process, they will be able to facilitate their own groups and coach other facilitators. By using this model of training-the-trainer, we are able to spread capacity across OST programs while uniting each program around a common language and understanding of youth development.

## Conclusion

While this chapter focuses specifically on our work in OST youth development, it does so to highlight the life cycle of a youth development theory as it moves from a model to an assessment to practice. The value of this process is that it unites a program or a network of programs with a common language and understanding. By identifying a unifying framework, or a common language to communicate learning goals, programs and networks will be better informed when selecting which data collection tools to use to measure the progress of their programs and participants. It is also important to shift the perspective on data collection in OST to embrace a system that not only informs on past success and challenges, but that serves as an integral part of a program from its very beginning. This new approach to data will allow programs to know every child at the beginning of the year, build stronger relationships, and increase student engagement in the program from the start. Rapid analysis and reporting of data at the beginning of programming would also provide information that could lead to changes in activity planning or execution of the program while the youth is still participating and could benefit from the changes.

If OST programs agree to adopt a common framework and set of tools around youth development, the next step to support these efforts is the development of a shared data system where programs can access this wealth of shared data. To this end, The PEAR Institute, with support from the Noyce Foundation, is developing a data system that will provide organizations with access to a variety of survey tools, as well as fully analyzed data reports and program improvement recommendations. This data system will translate youth social-emotional data in a common vocabulary within and between organizations, including comparisons based on an extensive de-identified database of youth participating in OST across the U.S., and ultimately our hope is that it will support international comparisons as well. Interventions and other practice recommendations would be included and linked to the data in an ever-evolving collection of best practices from OST programs in an ever-expanding network of collaboration. Developing such a system will undoubtedly come with a set of challenges including the difficulty of agreeing on tools, concerns around privacy, negative thinking around assessment, and feelings of competition among organizations. However, there is a great opportunity for OST providers and supporters to unite around sharing best practices, reduce staff time with efficient data collection tools, inform on national policy, and serve as the model for using data to drive quality improvement and youth developmental outcomes in the OST field.

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# Educational Quality of All-Day Schools in the German-Speaking Part of Switzerland: Differentiation of the Research Perspectives with Regard to Educational Quality

*Marianne Schuepbach, Benjamin von Allmen, Lukas Frei & Wim Nieuwenboom*

**Abstract:** In Switzerland there are a lot of different expectations connected with the development of extended education. However, it is largely unclear whether or not the expectations concerning an extended learning culture – and thus concerning diverse support measures in extended education offerings – are being met. This paper takes up this point and examines from different perspectives – through mixed methods research – the educational principles and goals and the educational quality of extended education offerings. We found that the emphasis that directors of extended education place on the goals of opening up the schools and students' manual and practical skills can explain in part the differing quality of extended education offerings.

**Keywords:** Educational quality, activities, offerings, all-day school, goal

## Introduction

In Switzerland, extended education for school-age children has been an important topic for about 15 years now. Today various models are in the schools or, supplementary to that, provided by other institutions. All-day schools are defined by the Swiss Conference of Cantonal Ministers of Education (EDK) as schools with all-day care offerings (including lunch) on several days per week (EDK, 2013). These are extra-curricular offerings – which I call extended education offerings in the following – that are usually under the care of the school principal and are conducted by a director of extended education. Some all-day schools have compulsory extended education, which means that all students attend certain extended education offerings in addition to regular hours of school instruction. Much more common are open-attendance all-day schools, where the children attend regular hours of school instruction and may voluntarily attend optional modular education and care offerings (Schuepbach, 2010).

Societal changes over the course of the 20th century have shaped the discourse on the content of education and the importance of the education system in the Ger-

man-speaking part of Switzerland (Schuepbach, 2010). Here, extended education is often seen as a possible response to growing challenges and demands, and expectations concerning extended education are manifold: All-day schools are viewed as a valuable contribution to the sociocultural infrastructure that makes it easier for parents to be employed and also makes it possible for children to participate in society and education. All-days schools are also expected to meet the increasing need for socialization outside the family and for institutionalized socialization and to contribute towards social integration. All-day schools are seen as the answer to the increasing requirements placed on school graduates. In addition, all-day schools are supposed to reduce educational inequalities based on social origins (Schuepbach, 2010).

In recent years and continuing today an important focus of our research in Switzerland is on the effects of extended education on students' academic achievement and socio-emotional development, and possible compensatory effects. The aim is to examine the extent to which extended education can meet educational and social expectations. In the German-speaking region of Switzerland, the first study on this topic was conducted from 2006 to 2011. The available investigation is the quasi-experimental longitudinal EduCare study (Schuepbach, Herzog, & Ignaczewska, 2013). The study – funded by the Swiss National Science Foundation – investigated children aged 6 to 9 in the German-speaking part of Switzerland. Regarding the development of mathematics and language achievement from the end of Grade 1 to the end of Grade 3, analysis showed that students who attended extended education intensively gained more substantially in achievement than students who attended regular school instruction only (Schuepbach, 2012; Schuepbach et al., 2013). There were no significant differences in socio-emotional development between students who attended extended education and students who attended only regular school instruction (Schuepbach, Ignaczewska, & Herzog, 2014). These findings are based on open-attendance and compulsory forms of all-day schools together. In addition to conducting a study that differentiates between the school forms, a further research desideratum, which is looked at in the current EduCare: All-day School and School Success? study, is to investigate the educational quality of extended education in a differentiated way. This is because the EduCare study also found that intensive attendance in extended education in Grade 1, or attendance in extended education of high quality, or both of these, had a positive effect on mathematics achievement (Schuepbach, 2014a). Intensity of attendance and educational quality (program structure and activities<sup>1</sup>) also had positive effects on the socio-emotional development (Schuepbach et al., 2014).

This means that what is needed is a shift of the research perspective to the educational quality of the offerings. With the expectations mentioned above concerning an extended learning culture, there are clear demands for a wide range of extended education offerings that take into consideration the individual needs of individual students. However, whether or not these demands are met in the German-speaking part of Switzerland is largely unclear. It has been stated from an education policy point of view (Flitner, 2011), that there is a certain lack of concepts regarding educational guidelines of all-day schools and their quality criteria. This paper takes up that point and examines what kind of extended education is offered in open-attendance all-day schools in the German-speaking part of Switzerland. Based on Holtappels &

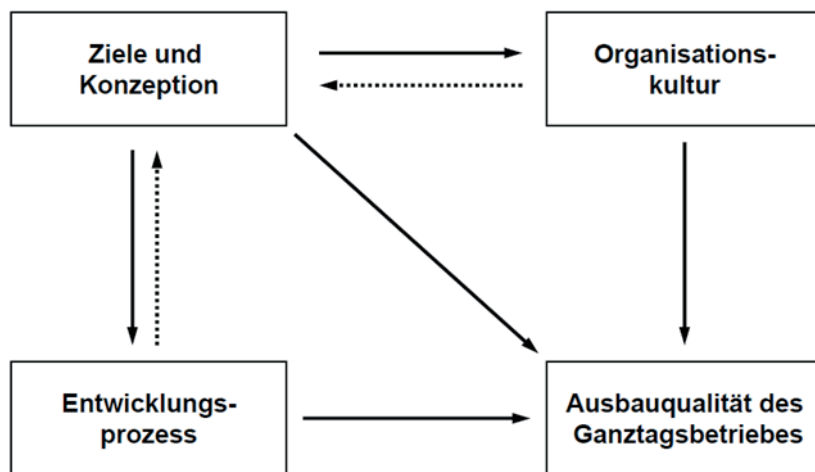


Rollett's (2008) theoretical framework explaining quality of all-day schools (Rahmenmodell zur Erklärung der Ausbauqualität des Ganztagsbetriebs), educational principles and goals are deemed highly important with regard to the educational quality of extended education offerings. We conducted mixed methods research and thus also in our methodological access took a changed research perspective – moving away from a tradition of mainly quantitative research.

## Review of the Literature

### *Theoretical Framework Explaining Quality*

Depending on the research question, research studies on the quality of all-day schools belong more to school effectiveness research or more to school development research: School effectiveness research studies the conditions for 'good schools' in terms of student learning outcomes, whereas school development research analyzes school quality with regard to its development conditions (Fischer, Radisch, Theis, & Züchner, 2012). Holtappels and Rollett's (2009) theoretical framework explaining quality of all-day schools is part of school development research and is a quality model. The model distinguishes three areas of conditions that affect the quality of extended education (see Figure 1).



*Figure 1.* Theoretical framework explaining quality of all-day schools (Holtappels & Rollett, 2009).

This model shows the theoretical interdependency among various school development characteristics and the quality of extracurricular offerings at all-day schools; it is based on empirical results from innovation and school development research



(Rollett & Holtappels, 2010). Quality is defined as “the result of a more or less successful development of an all-day school” (Holtappels & Rollett, 2009, p. 22; freely translated here). According to Holtappels and Rollett, quality can be described by means of various criteria. Here, starting from educational and school theory reasons for the development, a normative assessment is made. As central areas of conditions of quality, the model also distinguishes goals and principles, organization culture, and the development process.

The quality area goals and principles refers to the goals that extended education offerings should achieve. Organization culture encompasses especially the success of cooperation both within and outside the school, willingness for innovation, and participation of various groups in the operation of the all-day school. The actual development process that underlies the establishment of extended education is seen as a quality area in its own right and refers to, among other things, the type and extent of development measures and the participation of internal and external groups or institutions in the development process. For one, the framework model postulates a direct effect of school development characteristics on quality, which will be the focus of this paper. For another, the paper also takes up the mutual influences among goals and principles, organization culture, and development process.

### *State of Research on Educational Principles and Goals and on Quality Educational principles and goals*

The social and education expectations mentioned above make demands for a wide range of supportive extended education offerings that take into consideration the individual needs of individual students. However, whether or not these demands are met in the German-speaking part of Switzerland is largely unclear. In Switzerland, the 26 cantons organize their education structures independently. At the same time, however, the cantons are obligated to cooperate with the federal government on educational matters (EDK & SODK, 2008). Thus, there are no national guidelines on the organization of extended education. As a consequence, some cantons have regulated extended education offerings in their cantonal public school laws; in other cantons, this is not yet the case (Schuepbach, 2014b). This means that at the cantonal level there are definite differences in whether or to what extent educational principles and goals exist (Schultheiss & Stern, 2013).

In Germany, the Study on the Development of All-Day Schools (StEG) found that from the perspective of school principals, the main goals in open-attendance all-day schools are care and opening up the schools. School principals also mention as goals community, social learning, and personal development. Not as important are promotion of skills/competencies and talent and especially extension of the learning culture (Holtappels, 2008).

**Quality of extended education offerings.** An increasingly number of research studies are available on the educational quality of extended education, especially in the United States. Initial results on the effects of extended education in the German-speaking part of Switzerland showed (see first section above) that the benefits of extended education cannot be understood without taking the educational quality

of the programs into account. This was also found in the StEG in Germany (Fischer et al., 2011) and by a large number of studies in the United States (Mahoney et al., 2005). In a meta-analysis of 68 U.S. studies, Durlak, Weissberg, and Pachan (2010) found that especially programs that are sequential, active (training process), focused, and explicit lead to positive effects on school achievement. The U.S. studies have identified some general and consistent factors in educational quality, indicators for educational quality (Durlak et al., 2010). Factors are group size, student-to-staff person ratio, a broad range of stimulating and clearly structured activities, and well-planned organization. Schuepbach (2010) examined the educational quality of extended education offerings in Switzerland using a standardized observation scale, Hort- und Ganztagsangebote-Skala (HUGS), which is a German adaptation by Tietze, Roßbach, Stendel, and Wellner (2005) of the standardized instrument School-Age Care Environment Rating Scale (SACERS) (Harms, Jacobs, & White, 1996). The SACERS assumes that education quality is comprised of the three central areas of process, orientation, and structural quality (Tietze et al., 2005, p. 7). In the Schuepbach (2010) study, in the different quality areas (subscales) of the SACERS, the mean scores were in the range of medium educational quality (scores from 3 to 5), with the exception of the area of Interactions between persons, which were in the range of good educational quality (scores above 5). The profiles of the extracurricular parts of all-day schools were very close to each other. Only for the quality areas Health and Safety, Interactions, and Staff Development: Opportunities for professional growth were there differences of more than one point on the scale between the lowest and highest subscale scores.

A more differentiated look at the SACERS subscale Activities reveals that some quality characteristics scored lower than other items in other quality areas and were in the insufficient or medium quality range. Here it was found that there was often a lack of materials and activities that are sufficiently diverse and promote the child's development in Science/nature activities, Language/reading activities, Drama/theater, or Blocks and construction (Schuepbach, 2010). In summary, for all subareas of educational quality, the mean quality ratings were in the expected range. A comparison with three German studies shows that the Swiss extended education settings do quite well in the ratings (Schuepbach, 2010). Beyond that, there is an overall deficit of research on the quality of extended education in the literature on Switzerland.

**Effects of educational principles and goals on educational quality of extended education offerings.** The framework explaining quality of all-day schools was tested in StEG in Germany. The extensiveness and amount of the offerings was analyzed. For primary school it was found that a high degree of expansion was achieved if extended education closely followed the goals of skills/competencies development and promotion (Holtappels & Rollett, 2008). For the development of extensive offerings at the secondary school level, a stronger emphasis on educational development goals and more comprehensive specified guidelines had a positive effect. The same was the case for innovation readiness, cooperation among teachers, and strong participation of teachers in extended education offerings. Systematic quality development, external support measures, and more intensive further development of the all-day school concept also had a positive effect on the extensiveness and amount of extended education offerings (Rollett et al., 2011).

StEG also examined the connection between certain teacher goals (goals and guidelines) and occupational stress (organization culture) and process quality as perceived by students (Bruemmer, Rollett, & Fischer, 2011): The results revealed a negative association between teacher goals (recreation, opening up the schools, care) and process quality (at the first measurement). There was no significant association between occupational stress and perceived process quality. Based on the same framework model, the study *All-Day School and School Success?* examined whether a wider range of offerings could be predicted by selected characteristics of school development (Frei, Schuepbach, von Allmen, & Nieuwenboom, in press). For extended education in the German-speaking part of Switzerland, it was found that especially extended education offerings with more comprehensive specified guidelines possess a wider range of offerings to promote students, which agrees with Rollett et al.'s findings (2011) on the range of offerings in German all-day schools at the secondary level. No studies are available on educational quality from the perspective of outside observation, as the HUGS/SACERS measures, as a criterion of the quality of extended education offerings.

## Research Questions

Based on the previous state of research, the following questions will be studied:

1. From the perspective of directors of extended education, what goals should extended education offerings meet?
2. Educational principles and goals in the school guidelines:
  - a. Are principles and goals laid down in the guidelines?
  - b. How extensively are educational principles and goals described?
3. What is the quality of the extended education offerings?
  - a. From the perspective of outside observers
  - b. From the perspective of those responsible for the extended education offerings
4. Can differences in the quality of extended education offerings be explained by the goals of directors of extended education and how extensively the principles and goals are laid down in the guidelines of all-day schools?

## Method

### *Design and Sample*

The research questions were studied in a research project, *EduCare-TaSe – All-Day School and School Success?*, which is funded (from 2013-2017) by the Swiss National Science Foundation. *EduCare-TaSe* is studying children in Grades 1 and 2 at all-day schools. In this project we conducted a complete survey of open-attendance

all-day schools at the primary level (for economic reasons, at least two parallel first-grade classes was a requirement). Based on the definition by the Swiss Conference of Cantonal Ministers of Education (EDK, 2013) we undertook the following operationalization:

A primary school with extended education, called an ‘all-day school’ in the following, is a primary school with open-attendance, voluntary extended education offerings on at least 3 days per week, at lunchtime and in the afternoon.

Based on estimates provided by the education departments of the cantons in German-speaking Switzerland, 251 primary schools meeting these four criteria were identified. In the end, 53 primary schools and thus open-attendance all-day schools in 13 cantons participated in the study. As there was no information on extended education goals for one all-day school, this paper looks at the remaining 52 schools.

To answer the research questions we conducted mixed methods research. Mixed methods research means the combination of different qualitative and quantitative methods of data collection and data analysis. Here we chose a “fully integrated mixed model design,” as Tashakkori and Teddlie (2010) termed it. This is a dynamic and interactive mixing of methods, where the methods are combined systematically within different phases of the research process. The two methods are interlinked in several ways: We examined educational principles and goals from the perspective of the directors of extended education using a quantitative approach (question 1) and principles and goals laid down in the guidelines of the all-day schools using a qualitative approach, by means of qualitative and quantitative content analysis of the guidelines (question 2), and set the results in relation to one another. Further, the findings of the quantitative content analysis yield a variable on ‘extensiveness of educational principles and goals.’ This variable was entered into the regression model on the effect of principles and goals on the educational quality of the extended education offerings (question 4). The standardized observations on the extended education offerings by outsiders make it possible to ascertain, through quantitative analyses, generalizable findings on the educational quality from an outside perspective (question 3a). Beyond that, qualitative guided interviews with persons responsible for the extended education offerings allowed us to examine, in-depth and from an insider perspective, the extended education offerings, the free play activities, and additionally the supervised/guided activities among the extended education offerings, which are an important aspect of the educational quality of extended education offerings (question 3b). This way of proceeding can be used to gain a fuller picture and deeper understanding of quality.

### *Instruments, Scales, and Categories*

**Goals of extended education offerings from the perspective of extended education directors.** Directors of extended education filled out an online questionnaire asking about the extent to which extended education offerings should follow certain goals (adapted from Quellenberg, 2009). They gave their responses on a 4-point scale (0 = not at all, 1 = partly, 2 = to a large extent, 3 = to the full extent). The original scales could be replicated with a good fit. However, principal components analysis

yielded three factors: learning culture<sup>2</sup> (8 items) ( $\alpha = .90$ ), psychosocial development and key qualifications<sup>3</sup> (10 items) ( $\alpha = .84$ ), and opening up the schools and manual and practical skills<sup>4</sup> (8 items) ( $\alpha = .76$ ), which were then subsequently used.

**Educational principles and goals in the school guidelines.** A document analysis (Andrey & Arpagaus, 2014) was also carried out: We analyzed the content of available written educational guidelines at all-day schools in the German-speaking part of Switzerland and in part specific guidelines on extended education offerings following Mayring's (2010) structural qualitative content analysis. The category system comprised eight categories. In a further step, the guidelines at each all-day school were checked to see how many of the eight categories that they contained. A variable was calculated on extensiveness of educational principles and goals.

**Quality of extended education.** Process quality in the extracurricular part of all-day schools was measured in the first year of school using HUGS (Tietze et al., 2005), the German version of the SACERS (Harms et al., 1996). The observation instrument measures 50 quality features in six quality areas<sup>5</sup>, or subscales (scored from 1 = insufficient to 7 = excellent) ( $\alpha = .80$ ;  $M = 4.65$ ,  $SD = .56$ ). Of particular interest was the subscale Activities, which has 8 items<sup>6</sup> ( $\alpha = .73$ ;  $M = 3.95$ ,  $SD = .75$ ). These items capture materials, activities, and suggestions by the educational staff that allow children to explore and creatively engage with the environment and to further develop their interests, abilities, and skills.

Activities at all-day schools. After the standardized observations, problem-centered guided interviews following Witzel (1982) was conducted with persons responsible for the extended education offerings, asking about the free play and guided activities in the extended education offerings and in primary school. The interviews were analyzed (Gruetter, 2014; Rohrbach-Nussbaum, 2015) using content analysis following Mayring (2010).

## Results

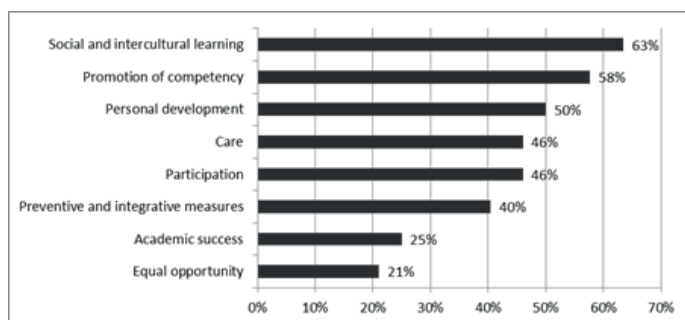
### *Descriptive Results on Educational Principles and Goals*

**Findings on the goals of extended education offerings from the perspective of directors of extended education (questionnaire survey).** The directors of extended education rated the opening up of the schools to the community and promotion of students' manual and practical skills as the most important goals<sup>6</sup> to strive after in extended education ( $M = 2.01$ ,  $SD = .42$ ). This was promotion of manual/handicraft skills but also practical life skills, such as traffic education or media education. The directors of extended education rated psychosocial development and key qualifications as ( $M = 1.59$ ,  $SD = .53$ ) somewhat-to-largely important, and thus as the second-most important goal area<sup>7</sup>. This was students' acquisition of key qualifications such as planning, analyzing, problem solving, ability to work in a team but also promotion of intercultural learning and attention to psychosocial problems of students, among other things. The third-most important goal area was the creation of a learning culture ( $M = 1.40$ ,  $SD = .64$ ), which included aspects such as promotion of

task orientation, self-directed learning and independence, and individual promotion of students.

### **Results of the document analysis concerning goals and their extensiveness.**

The results of the document analysis show that 82% of all-day schools (43 schools) have documents that correspond to educational guidelines (guiding principle, educational concept, or school program; see Holtappels, 2004) and mention extended education offerings at least once. Further, the results of the structural qualitative content analysis following Mayring (2010) showed that educational principles and goals were laid down in the written guidelines in eight different areas (see Figure 2): These were most of all goals in the area of social and intercultural learning (63% of all all-day schools). For example, the guidelines of one school stated, “the all-day school should offer a learning arena for promotion of self-competency and social competency in multicultural mixed-ages groups” (School\_10308\_P). Further, the guidelines of almost 60% of the all-day schools named goals to promote students’ competency – that is, the teaching of school-subject and general competency. One school stated, “the extended education staff should promote the self-competency, social competency, and school-subject competency of the children” (School\_10401). In addition, half of the all-day schools mentioned goals pertaining to children’s personal development, stating for example, “through concentration processes in which the child engages freely and intensively in a commitment to something, the child develops ‘freedom to act’ and personality” (School\_10101) (Andrey & Arpagaus, 2014).



*Figure 2.* Educational principles and goals laid down in the guidelines of all-day schools (N = 52).

In a next step – based on the educational principles and goals found in the schools’ guidelines – we calculated the extensiveness of the goals, defined as the number of different goals named in the guidelines of an all-day school. Approximately 35% of the all-day schools did not refer in their guidelines to extended education offerings at all and thus made no mention of specific educational principles or goals. About 20% of the schools referred in written guidelines to three or four goals, and about 45% of schools named to five to eight goals that the extended education offerings should strive to meet.



### Descriptive Results on Educational Quality

Findings on the perspective of outside observation. The findings on the educational quality of extended education offerings, obtained using standardized observation (see Figure 3) showed that across all all-day schools, the mean educational quality score was 4.65 (SD = .56) and therefore medium. The lowest score found for an all-day school was 3.45 (medium quality range), and the highest score was 5.80 (good quality range). The HUGS/SACERS instrument provides descriptors for each of the odd numbers on the scales.

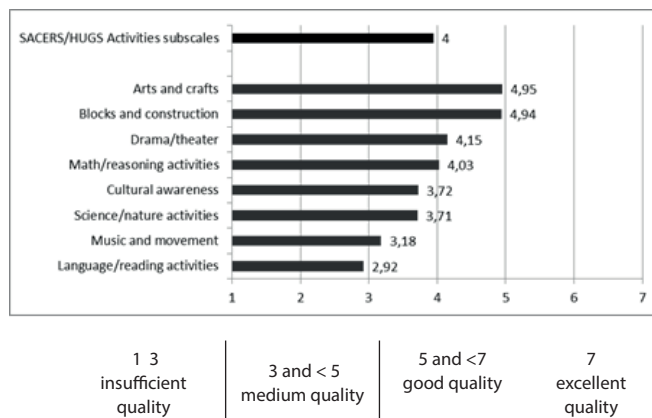


Figure 3. Educational quality: SACERS total average score and individual subscales/quality areas (N = 52).

For example, a rating of 3 on the scale indicates minimum quality, where basic materials are available to students but the educational support is low and there is hardly any educational use of the materials to be observed. A rating of 5 on the scale indicates good quality, where there are appropriate materials in appropriate surroundings, and where students have developmentally appropriate experiences supported by educational staff (Tietze et al., 2005).

The mean scores in the quality areas ranged from above 5 for Interactions ( $M = 5.13$ ;  $SD = .74$ ) and Staff Development: Opportunities for professional growth ( $M = 5.12$ ;  $SD = 1.02$ ) and a score of less than 4 for Activities ( $M = 3.95$ ;  $SD = .75$ ).

A closer look at the individual subscales of Activities (see Figure 4) shows that Arts and crafts ( $M = 4.95$ ;  $SD = 1.72$ ) and Blocks and construction ( $M = 4.94$ ;  $SD = 1.44$ ) were rated in the good quality range and thus were very well developed at all-day schools in the German-speaking part of Switzerland. Science/nature activities ( $M = 3.71$ ;  $SD = 1.29$ ) and also Math/reasoning activities ( $M = 4.03$ ;  $SD = 1.27$ ) were rated at around 4 in the medium quality range.



Figure 4. Educational quality: SACERS Activities subscale and individual items (N = 52).

Especially noteworthy is that in the extended education offerings, Language/reading activities were found to be insufficient ( $M = 2.93$ ;  $SD = 1.55$ ), and also Music and movement was rated just above 3 ( $M = 3.18$ ;  $SD = 1.31$ ). Rated at around 3, these two activities were observed to be of minimum quality.

Taking a more differentiated look at the subscale Language/reading activities, minimum quality – which on average is not even achieved by extended education in the all-day schools in the German-speaking part of Switzerland – means that there are some materials such as books, CDs, or stories available, age-appropriate stories are read to the children weekly, and the students are encouraged to read and write. For Activities in the area of Music and movement, minimum quality – which is just barely achieved – means that children have possibilities for experiencing music, such as listening to music or playing music, once a week. In addition, the students should have CDs, dance props, and musical instruments available to them (Tietze et al., 2005).

**Results of the qualitative content analysis (interviews) on the perspective of those responsible for the extended education offerings.** In a next step, we wanted to take a much closer look at these findings: The results of the qualitative guided interviews with a person responsible for the extended education offerings on the topic of the activities at their schools were meant to examine and deepen the findings reported from the quantitative part of the study from a further perspective, the perspective of extended education staff.

Within the qualitative part of the study, in the interviews we further differentiated between *free play* and *guided activities* at the all-day school. Free play activities were defined as activities that take place during free play. Students may choose freely among various activities and may also change their activities (EduCare-TaSe, 2013). Guided activities were defined as activities led by educational staff. These activities at certain times – with a starting time and end time, conducted regularly – take place in a fixed group; they are voluntary but binding once chosen. There



are guided activities that are offered only in the extended education program at an all-day school and are open to extended education participants only. Primary schools also have guided activities for their students; the guided activities at primary school can be attended by all children at the school and also by students that attend extended education (EduCare-TaSe, 2013).

In the following, we present the interview results for only the activities subscale Language/reading activities, which was rated on the HUGS/SACERS as having only minimum quality in the all-day schools in the German-speaking part of Switzerland. For the free play activities in extended education, the results of the structural content analysis of the interviews following Mayring (2010) for Language/reading activities showed the following: Over two-thirds of the educational staff in extended education mentioned the possibility for students to use books, dictionaries, encyclopedias or audiobooks. The students read picture books, non-fiction books, comics, or children's and youth literature. They also mentioned language games that promote language skills, but they did not name specific games that focus on language (Grutter, 2015). The results on the guided activities led by staff in extended education in the area of Language/reading activities show that sometimes a group visit to the school library was offered. In addition, the students were told stories; this was not usually a regular offering all year long. In contrast to the guided activities in extended education, the guided language activities in primary school were much more varied. For German/literature/reading, library visits were very common and open to all primary school students. Three primary schools offered in addition to compulsory German instruction also an optional German course: "There are many children who attend the optional German course. Some of them leave extended education before 1:00, so that they can go to the German course before afternoon school hours begin" (Staff\_School\_10802). The German course is intended as support for children with German as a second language but also as a learning platform for general promotion of German, which is a main school subject. Foreign language instruction was offered at only five primary schools; the interview participants mentioned English and Italian explicitly (Rohrbach-Nussbaum, 2015).

### *Regression Analysis for Prediction of Differences in the Educational Quality of Extended Education Offerings*

To investigate possible effects of the described goals of extended education offerings and the extent to which they are laid down in the guidelines of all-day schools on the quality of the offerings, we used step-wise multiple linear regression analysis with educational quality as the dependent variable (Table 1). No multicollinearity was found with correlations below .17.

*Table 1. Results of the Multiple Linear Regression Models: Educational Quality, SACERS Total Score*

	<b>Model 1</b>	<b>Model 2</b>
<b>Predictors</b>	b (SE)	b (SE)
Constant	4.65 (.07)	4.64 (.12)
Directors' goal: <i>Learning culture</i>	.06 (.07)	.06 (.08)
Directors' goal: <i>Psychosocial development and key qualifications</i>	.09 (.07)	.09 (.08)
Directors' goal: <i>Opening up the schools and manual and practical skills</i>	.20**(.07)	.20** (.08)
Extensiveness of educational principles and goals in school guidelines		.01 (.03)
R <sup>2</sup>	.17	.17

Note: \* $p \leq .05$ ; \*\* $p \leq .01$ ;  $N=52$

In model 1, the basic model, as a first step the three extended education goals were included in the model. These three goals are statistically independent of one another. The explained variance of the first model changed significantly ( $p < .05$ ) compared to the null model. The predictors explained 17% of the variance. The non-standardized coefficient  $b$  of the goals of directors of extended education opening up the schools and manual and practical skills was significant ( $b = .20$ ;  $p < .01$ ) and had a significant effect on the quality of extended education. In addition to the extended education goals, the predictor extensiveness of educational principles and goals in the guidelines of the all-day school was included in model 2, and the model was not improved, and the four predictors explained 17% of the variance again. The extensiveness of educational principles and goals laid down in the guidelines of the all-day school had no effect on the educational quality of extended education. The results show that one of the goals of directors of extended education, opening up the schools and manual and practical skills had an effect with regard to differences in the educational quality of extended education offerings. The results of the regression models for the quality area Activities as dependent variable pointed in the same direction.

## Discussion

In this paper we took a research perspective on the educational quality of the extended education offerings. To answer the research questions we chose mixed methods research and a fully integrated mixed model design (Tashakkori & Teddlie, 2010). With this, we took a changed research perspective also in the methodological approach. The findings on goals from the perspective of directors of extended educa-

tion show that the goals that they regard as the most important for extended education are opening up the schools to the community and promoting students' manual and practical skills. This area includes promotion of handicraft and practical life skills such as traffic education and media education, which is in line with findings by Holtappels (2008) in Germany. The directors view goals in the area of psychosocial development and student learning as less important. In contrast to that, in written guidelines of all day schools, the goals most frequently described are goals in the areas of social and intercultural learning, promoting students' school-subject and general competencies, and children's personal development. This discrepancy between the goals of the directors of extended education and the educational principles and goals actually laid down in the guidelines for the school as a whole, the all-day school, and the extended education program can be interpreted to mean that the goals for academic, social, and personal development are compatible with the curriculum goals laid down in the Swiss school curricula. They can thus be better legitimized in the guidelines of the school as a whole. As for the extensiveness of educational principles and goals described in the guidelines of all-day schools, it is somewhat sobering to note that in about one-third of the all-day schools, the guidelines make no mention at all of the extended education offerings and thus no mention of any specific educational principles and goals. On the other hand, just under half of the all-day schools have guidelines that name five to eight goals that extended education should strive to meet. Extended education thus appears to have found its way into educational concept considerations and documents at about half of the all-day schools.

As for the quality of extended education offerings, from the perspective of outside observers it is medium, which is a slight improvement over the ratings in the previous study, EduCare for school year 2006/07 (Schuepbach, 2010). The average scores in the quality areas in the current study (for school year 2013/14) range from medium to good quality. Compared to the previous study, this indicates, except for the quality area Interactions, an overall improvement in the mean ratings, even though the improvements are in part small (Schuepbach, 2010). Still rated the lowest in quality, even though it is rated much higher than in the previous study, is the quality area Activities. For this reason, the quality of the area Activities was also examined and differentiated from another perspective, the perspective of persons responsible for the extended education offerings. Here, we in addition made a distinction between free play and guided activities. All in all, the assessments by the people directly responsible for the extended education offerings, analyzed by means of qualitative analysis, agree largely with the ratings of the outside observers, measured quantitatively. The chosen multi-perspective approach made possible here a fuller picture and deeper understanding of the available activities and their quality. All in all, the findings on educational quality show that quality has improved in recent years in all-day schools in the German-speaking part of Switzerland. However, at these all-day schools there is a lot of room for improvement of the learning setting and the activities. We know from research in the United States in particular that especially programs that are sequential, active (training process), focused, and explicit lead to positive effects on school achievement (Durlak, Weissberg, & Pachan, 2010). Many extended education programs in German-speaking Switzerland appear to be far removed from programs of that kind.

Finally, we found that the emphasis that directors of extended education place on the goals of opening up the schools and students' manual and practical skills can explain in part the differing quality of extended education offerings. However, how extensively educational principles and goals are laid down in the guidelines of the school as a whole has no effect on the quality of extended education offerings. This finding is in line with the results of a study by Frei et al. (in press), which found that school development characteristics can predict quality.

Here it must be remembered – and we come now to limitations of the study – that laying down goals in a school's educational concept can encourage educational quality. But the reverse conclusion is also possible: that the existing extended education offerings can lead to new specified guidelines/principles. Because for the directors' goals the assessments were retrospective and because overall the data were cross-sectional, we can hazard no definitive conclusion as to causality. In the scope of this paper, we could not cover all areas in Holtappels und Rollett's (2008) framework model that the model deems important. This makes it difficult to find out more about the exact mechanism of the effects. One reason for this limitation is the already very extensive list of questions, where we had to limit the examination to selected aspects of school development characteristics. Another reason is the sample, which is rather small for regression analysis and would have reached its limits with further items. Precisely because of that, however, are the findings all the more remarkable.

In conclusion, our results show a mixed picture of educational quality and school development characteristics with regard to extended education in Switzerland: A considerable number of all-day schools still lack guidelines on extended education, and – this is probably even more important – there seems to be a discrepancy between written guidelines and the goals as stated by directors of extended education. Since certain goals of the directors seem to have more impact on overall quality than written guidelines, future efforts should focus on ensuring that guidelines laid down are more firmly incorporated in the goals and attitudes of the individual actors. Although the overall quality of extended education is medium to good, there is room for improvement, which applies in particular to activities with a stronger focus on language and academic development. If extended education is indeed intended to foster academic achievement, school development needs to place an even stronger focus on academic goals and activities.

## Endnotes

- 1 Measured by two subscales of the Hort- und Ganztagsangebote-Skala (HUGS), which is a German adaptation by Tietze, Roßbach, Stendel, and Wellner (2005) of the standardized instrument School-Age Care Environment Rating Scale (SACERS) (Harms, Jacobs, & White, 1996).
- 2 Example items: promote task orientation; promote self-directed learning and students' independence; promote students individually.

- 3 Example items: acquisition of key qualifications (such as planning, analyzing, problem solving, ability to work in a team); promote intercultural learning; attention to students psychosocial problems.
- 4 Example items: open up the schools to the community; promote manual skills; acquisition of practical life skills (such as traffic education).
5. The subscales are Space and Furnishings, Health and Safety, Activities, Interactions, Program Structure, and Staff Development
- 6 arts and crafts, music and movement, blocks and construction, drama/theater, language/reading activities, math/reasoning activities, science/nature activities and cultural awareness
- 7  $1 - 2 \quad t(51) = -8.32, p < .001; \quad 1 - 3 \quad t(51) = -7.13, p < .001$
- 8  $2 - 3 \quad t(51) = -3.18, p < .01$

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# Dinosaurs and Other Dangers: Navigational Play in a World of Trouble

*Charles Underwood, Mara Welsh Mahmood, Dirce M.F. Pranzetti & Maria Cecilia Toloza O. Costa*

**Abstract:** This article presents a case study of a child who attended Projeto Clicar, an extended education program designed for the social and educational development of children living on the streets of São Paulo, Brasil. We discuss how his discovery of the existence of dinosaurs unleashed a sustained artistic output at Projeto Clicar. We document the “third space” of Projeto Clicar, which offered repertoires of practice that represented alternative modes of relation for the children of Projeto Clicar. We discuss how this alternative relational space provided the tools for ecological resilience in a hazardous world, as the child’s dinosaur art became both a exploration of inter-relatedness and a means of expressing his own predicament of place, navigating between the open, inclusive world of Projeto Clicar and the closed, exclusive geographies of the city streets outside its reach.

**Keywords:** social inclusion, third space, relational habitus, participatory appropriation, anticipatory appropriation

## Introduction

In this article, we offer a case study of a young person who frequented Projeto Clicar, an extended education program designed to promote the social and cognitive development of children living and working on the streets of São Paulo. For over seventeen years, Projeto Clicar provided informal educational resources and activities at Estação Ciência, a science museum in the low-income district of Lapa in São Paulo, until its closure in 2013. In its informal digital and hands-on activities, Projeto Clicar linked children (aged 5 to 18) to professional educators and older peers (university students from the Universidade de São Paulo).

The children who frequented the program convened from a variety of neighborhoods throughout the expansive Brazilian city. Many of them were not in school, had never been to school, or had only attended school for a year or two. In participating at Projeto Clicar, they voluntarily entered a space where they were able to explore a variety of digital tools and other resources – board games, art activities, picture books, etc. There was little or no formal instruction, yet there were always educators (including both credentialed professionals and trained university students) at hand whom the children could ask for guidance when they were unable to solve a problem

for themselves. The children learned to engage in these varied activities through interaction with each other and with the educators, who often participated with them as more experienced partners in the activities. The team of educators was specifically trained not to “instruct” the children, but to ask them questions and guide them to work together and build on each other’s knowledge. The educators who worked at Projeto Clicar, including its directors and the university students they trained to work directly with the children, also provided counseling and assistance in finding adequate food, clothing, and shelter for the night. All these activities took place in a special area set aside for these children within Estação Ciência.<sup>1</sup> The young people who attended Projeto Clicar faced a difficult life on the streets, and the program, open every weekday afternoon, represented a haven for them from the hardships of that life.

For those children, Projeto Clicar was a separate “world” of activity, an arena of playful activity, a “third space” that offered a safe refuge outside the constraints of strict institutional surveillance and externally imposed expectations (Gutierrez, 2008). To illustrate the range of activities that the program offered to these young people, we examine the experience of one child, whom we call Tiririca (a pseudonym). Of course, the circumstances of the many young people who frequented Projeto Clicar were highly variable, and the educators accordingly tried to expose them strategically to a variety of engaging activities that helped in the initial assessment of their specific needs, interests, and abilities. These activities ranged from computer games, supervised Internet explorations, art projects in a variety of media, movies (once a week) to which these young people rarely had access, as well as various informal activities to encourage and improve reading and writing among the participants.

In the ethnographic description below, we show how the activities at Projeto Clicar helped Tiririca to develop a fascination with dinosaurs and to cultivate a capacity for producing artwork of increasingly high quality. We suggest how his artwork both enabled him to reflect on his experience and to explore his own path toward an uncertain future. We attempt to show how the scaffolded activities and learning opportunities offered at Projeto Clicar, co-constructed by educators and participants, enabled the children to envision alternative scenarios for navigating the ever-present hazards and violence they faced on the streets, thus providing them with the potential for greater agency and purposeful activity. We examine the program ethnographically, through the perspective of one child, as a framework of integrative activities that helped young people contextualize their experience of social exclusion through a form of navigational play that enabled them to explore alternative paths through their world of trouble.

## Review of the Literature

In Tiririca's world, the question of navigating the streets of São Paulo represented a formidable dilemma. It implied crucial choices and the cautious calculation of the many hazards and slim opportunities that lay in his present and future path. In the cognitive ethnography that follows, we investigate how the activities at Projeto Clicar, leading to his discovery of dinosaurs and thus giving him the tools and relationships to encourage and pursue his knowledge and understanding of dinosaurs as symbolic creatures that represented his own self-identification and self-preservation in a hazardous world, supported Tiririca's cognitive process, his reckoning of his own course toward a newly envisioned possible future, or toward envisioning even the possibility of a future.

Drawing on Vygotsky's (1978) concept of the zone of proximal development, which focuses on the process by which individuals are able to learn in collaboration with others what they cannot figure out on their own, and on Lave's (1996) definition of learning as changing participation in sociocultural activities, Rogoff (1995) has viewed learning not as an internalization of values and skills, but as the transformation of engagement in shared socio-cultural activities, such as those deliberately framed by Projeto Clicar's activities, through a process that she calls "participatory appropriation." This concept springs from the Vygotskian and Deweyan view that cognition takes place not simply within the individual brain, but always in the context of socio-cultural activity (Dewey, 1938; Vygotsky, 1978). From this perspective, learning is necessarily "situated" within the social context of a learning community – a community of practice in which cognitive development is not simply the transmission of information from one person to another, but instead involves the interactive co-construction of knowledge through participation in practical activity (Lave and Wenger, 1991). Learning may thus be observed in participants' movement from peripheral to more integral participation in specific activities. The concept of participatory appropriation highlights the change both in the amount or level of participation and in the nature of their participation (Rogoff, 1995). When we view this process in situations like that of Tiririca at Projeto Clicar, we begin to recognize the interactive elements that contribute to individuals' changing participation – the pedagogical guidance of educators through the tasks they set and the agentic reflection by participants concerning the nature of their own participation. When we examine how this participatory transformation takes place over time, we are observing what we call "anticipatory appropriation" – the participants' active dead reckoning, their cognitive anticipation of what they need to do and in what ways, to become more accomplished, decisive, agentic players in the activities and situations in which they find themselves (see Results).

In this sense, Tiririca's art appeared to represent an attempt to navigate ambiguity and insecurity, to answer the questions that, as Hutchins (1996) suggests, navigational activity tries to address: "Where am I?" and "If we proceed in a certain way for a specified time, where will we be?" (Hutchins, 1996, p. 39) In the world of navigation, this process is called "dead reckoning" – a term that reflects the chilling urgency of the distributed cognitive process. Elsewhere, we have discussed such navigational

play at Projeto Clicar as a form of integrative learning in which children's attention is transformed into agentive capacities of a higher cognitive order (Underwood, Mahmood, Pranzetti & Toloza, 2016). In describing Tiririca's experience below, we link Hutchins's (1996) perspective on distributed cognition as a navigational process with Rogoff's (1995) view of learning as participatory appropriation, to develop the concept of anticipatory appropriation as a tool for understanding learning in the context of time. Through this conceptual lens, we view how Tiririca's dinosaur artwork became a playful exploration of inter-relatedness and a means of expressing his own predicament of place. This navigational play enabled Tiririca, during the period of his participation at Projeto Clicar, to anticipate and plot his way between the open, inclusive community of practice that the program provided and the closed, exclusive geography of the city streets outside its reach.

## Methods

We approached this case study as a cognitive ethnography, a methodology that explores the co-construction of meaning among participants in sociocultural activities. Cognitive ethnographies examine distributed cognition within social ecosystems that both constitute and are constituted by individual agents' engagement in activities framed by a particular social setting's relational habitus. Analyzing activity in this way enables us to observe the distributed cognition among participating children through their mutual engagement with program tools and artifacts over time. In this way, we pursue an inductive approach to observation of historically situated social settings and activities. This ethnographic approach calls for observation and description of the specific physical space of activity. It involves examining the physical arrangement of people and objects in that space, appraising the artifacts and tools used, including language use and task-oriented dialogue, and observing participants' interactions in the pragmatic transfer and exchange of information and knowledge (Hollan, Hutchins, & Kirsh, 2000).

Although this case study focuses on an individual, it analyzes that individual's enactment of the activities established among participants in the program's interactive framework, or what we call its "relational habitus" – its particular configuration of tools, tasks, selves, and others (Stone, Underwood & Hotchkiss, 2014; Underwood, Mahmood, Pranzetti & Toloza, 2016). Adapting Bourdieu's conception of habitus, which focused on the psychological dispositions of individuals internalizing social structures, the concept of relational habitus addresses the interactive engagement of selves and others in the intersubjective co-production of communicative processes that are "intersubjectively constructed and sustained over time in formal and informal learning environments" (Stone, Underwood, & Hotchkiss, 2012, p. 66). The concept of relational habitus provides for a pragmatic focus on the observable communicative processes implicit in learning and development (Underwood, Parker & Stone, 2013). As a tool for cognitive ethnography, relational habitus enables us to specify the configuration of interactive elements and their enactment in a particular learning environment, and thus to describe individuals' orientations to their own

participation and trace the transformation of these orientations over time. That is, we can assess the changing participation of children in informal learning activity as their navigational exploration of the possibilities and limits they envision in their social world.

It is thus a study of human cognition in a specific sociocultural context, within which information, meaning and understanding are embodied in the joint activity of participants in the specific sociocultural setting – in this case, Projeto Clicar. From 1996 until 2012, Projeto Clicar, supported by the Universidade de São Paulo, an NGO, and Petrobras, was located at Estação Ciência, an old factory converted into a science museum. Estação Ciência, until its recent closure, offered a wide variety of hands-on and digital activities, exhibits, and demonstrations illustrating scientific knowledge and inquiry. While the museum offered exhibits and activities for school children and their teachers, it also set aside a portion of its space for Projeto Clicar. As part of the museum, Projeto Clicar operated Monday-Friday from about 12pm–6pm throughout the year and offered young people who faced severe conditions of social exclusion new learning tools and activities within this inclusive world inside the museum (Underwood, Pranzetti, & Toloza, 2014).

It is important to note that the research reported here was always carried out as a secondary activity. The primary focus of our work at Projeto Clicar was to support the social and cognitive development of the young people who took part in its activities. We undertook our research largely to gain insight into the participants' lives, needs, and interests, so that Projeto Clicar's activities could be more suitably adjusted and adapted to build on the particular needs and interests of those young people. As a result, in our cognitive ethnography of the relational habitus established and continually developed at Projeto Clicar, we observed interactions in a variety of tasks and activities. We often selected particular tasks or activities – such as computer games, writing exercises, or art projects – for special observation, and we observed the children while maintaining our pedagogical engagement with the children in those activities. Together and separately, the authors pursued this work as participant-observers, making observations while we engaged in the activities with the children, and cross-checked our various observations and interpretations with each other.

By describing the subjects' response to the informal learning activities at Projeto Clicar, we attempt here to show how program activities mediated his development over time. As noted, we engaged directly in the everyday activities and interactions with the young people of Projeto Clicar to learn explicit and implicit aspects of their social world (Dewalt & Dewalt, 2010). Our research strategy included face-to-face observations of activities, the study of appropriate conversational pragmatics among the site's participants, and documentation of informal conversations and interviews, among other research methods (Briggs, 1986; Peltó, 2013). Because of the specific character of the social setting and our particular roles in that setting of collaborating closely with the program's directors in supporting program activities, we focused on working directly with the children as they engaged in program activities, primarily as a pragmatic strategy for improving and documenting the program. As Directors of Projeto Clicar, Dirce Pranzetti and Cecilia Toloza were professionally responsible for the site's organizational and pedagogical activities almost daily over a period of

seventeen years, while co-authors Underwood and Mahmood took part in successive ethnographic visits to the site, both together and separately. In carrying out our respective professional responsibilities, we collaboratively maintained a persistent, almost daily observation, kept detailed field notes, and held many discussions, over a period of more than fifteen years, about the learning processes among the children with whom we were participating and observing. This strategy enabled us to confront ethical dilemmas of qualitative research as we actively pursued Packer's (2011) methodological call for qualitative research to examine and explore alternative, inclusionary modes of relation in the co-construction of social activity.

We carried out this approach in response to ethical and methodological concerns about working in an educational setting which precluded clinical or experimental research design, and which was designed directly to advocate for, rather than conduct research on, the young people participating in the site's activities. In this sense, our research was formative, seeking to find ways to modify and improve the learning activities at Projeto Clicar. We view our approach as a form of design-based ethnographic research, examining learning processes and interventions in those processes, with the objective of generating innovation in educational activity (Brown, 1992; Drotner, 2013). In writing up our findings, we have drawn on Luria's narrative approach to presenting scientific findings – an approach that attempts “to preserve the wealth of living reality” (Luria, 1979, in Sacks, 1990, p. 183). Luria's approach emphasized the importance of grounding the scientific study of human beings in their concrete existence, in order to elucidate “the role of the historical, the cultural, the interactive, not merely in modifying, but in actually making higher nervous functions possible” (Sacks, 1990, p. 187). Based on this observational and analytical focus on specific activities over six years (the period during which Tiririca attended Projeto Clicar), this article presents an ethnographic case study of one child's interaction both with other children and with the Projeto Clicar educators in the relational habitus established by the program.

## Results

For a number of years, Tiririca was a central figure among the children at Projeto Clicar. Of course, Tiririca was not his real name. He was nicknamed by the other children after a famous Brazilian clown, a character who, like his namesake, had a rough, expressive face that often broke into a wide, winning smile. It was no accident that the other children at Projeto Clicar gave this child that special name. Little Tiririca looked the part with every word and gesture, although it was no act on his part. He loved to laugh and make others laugh.

In his initial appearances at Projeto Clicar, Tiririca was skinny and small for his age – so much so that at first he was always called by a diminutive of his actual name. There was at that time no mention of the nickname he later came to acquire. The famous clown was not yet known to the children; in any case, the nickname was not yet known to Projeto Clicar educators, since no one yet called him that when he first arrived at Projeto Clicar.



One educator later noted,

I cannot remember when he told us about the nickname or when the nickname began to be more apropos than his own name. Looking at the notes and seeing his work, I think that he was a boy with some schooling and that he had once had a family, because he knew how to write words and phrases that most children living on the streets at that time did not know. Also he told us the date of his birth, a relatively rare piece of information among the children at Clicar. Many children did not associate their date of birth to their birthday!

If the birth date he claimed was correct, he was older when he began to attend Projeto Clicar than most of the other children who frequented the program. According to program data, he first appeared in 1996. Tiririca's initial arrival at Projeto Clicar was noticed by everyone around him. One educator described him as "pint-sized, [with a] scrawny, small body, a body of a boy with a man's face. He was not cute, much less charming, [he was] strong and muscular like many boys who live on the streets." Even at that time, at the age of about thirteen, Tiririca had the face of a mature man, characteristic among many children who suffer persistent nutritional problems. For a young adolescent, it was an unusually aged face, lined and world-weary, and yet frequently smiling. The photographs and comments of educators from that time show the prevalence and readiness of his smile. As one of them said, "He always impressed me by his gaze. His eyes were small, like two small jabuticabas [the fruit of the Brazilian grape tree] and black, and he had a very wide, infectious smile."

### *The Relational Habitus: Projeto Clicar as a Third Space*

He first arrived at Projeto Clicar along with Jorge (a pseudonym), who was then known among the children as Tiririca's protector. They both came from Jandira (a city that is part of greater São Paulo), where they lived most of the time. Sometimes they came to Lapa (the district in São Paulo where Estação Ciência was located) and strolled around, and finally, one day, they discovered Projeto Clicar. At first, Tiririca was not very regular in attendance, but in a short time, Lapa became his primary space for living and surviving. Every morning, he earned spare change by helping out the street vendors on the square in front of Estação Ciência, and in the afternoon, he would enter the museum and spend a few hours at Projeto Clicar. As one educator noted,

Tiririca always arrived with a huge, bursting smile, his extremely personal trademark, always smiling and with incredible good humor. Over a few years he developed in the same way, a boy-man, puny, friendly, agreeable, unique, and captivating. With difficulty, he usually walked the streets alone, but he was often accompanied by 'good protectors,' true friends [like Jorge], but as nothing is perfect, and even less on the streets' ambience of abandonment, he was also surrounded by 'false friends' and others not so friendly.

Tiririca and Jorge soon became more regular at Projeto Clicar, and like other children began trying out different activities. Jorge gravitated toward the computers, playing games and figuring out the mouse and keyboard, while Tiririca was more exploratory, trying out computer games and searching through books and magazines, and finally focusing more and more on artistic activities.



Tiririca, like the vast majority of children attending Projeto Clicar, did not easily talk about his day-to-day difficulties in living on the streets. These hardships included issues such as finding food to eat, washing, going to the bathroom, finding transportation and securing shelter from rain and the perils of the night. Talking about these subjects usually occurred in private, with some educator whom the child especially liked, and took place only in times of great difficulty for the child, or when the child came to Clicar and the educators immediately noticed their general condition. Noticeable fatigue and clothes that were more filthy and ragged than usual, irritability and sleepiness – these indicated that a child's situation on the streets had worsened. For this reason, the educators approached the subject with the children only at the reception desk – the table at the entryway to Projeto Clicar where attendance was taken and the children created their own identification badges and where their notebooks were kept – or when they were alone, drawing or engaged in a solitary activity. At such moments, the educators would inquire about the child's circumstance and try to ascertain if there might be a solution to their immediate predicament.

For both Tiririca and Jorge, Projeto Clicar offered an inclusive third space – a safe place to be and a locus providing access to new learning tools and activities while offering an alternative interactional dynamic, replacing the hard, challenging world of the streets with an easy-going setting of open conversation and exploration. One of the program directors remembered Tiririca's early presence at Projeto Clicar.

Super friendly, a nice guy, but also a very introspective person when he began to make sculptures with plastic modeling dough, to draw, paint, search for and look at images in books or on the computer screen. He was a quiet kid and calmly related to the smaller children and also with the older boys.

He was well liked by the other children at Projeto Clicar and admired for his amazing skill and ability to turn a mound of clay into a three dimensional dinosaur. For most of the children, who could not make standing forms made of clay, he was held in awe as a source of inspiration. Of course many children made fun of him, because he was so kind and naive and he often seemed not to understand the cutting jokes they made about him, especially after he became known by his nickname. "I never remember him fighting or using aggressive words or even using physical violence to other children. He really was a sane and very calm guy."

Tiririca was a great storyteller. Whenever he came to Projeto Clicar, he had something to talk about, and he talked a lot. Yet it was often difficult to differentiate the real from the imaginary, first-hand experiences from drug-induced exaggerations. In the words of one educator, "Tiririca presented himself to us educators as a sweet boy, gentle, intelligent, friendly and humorous, but in his heart he was very insecure and did not believe in his own personal qualities and potential. He always lived in the shadow of a street companion, who was often essential to his survival." His companions told a variety of stories about him, either joking about him in his absence or teasing him in his presence. But in the activities framed at Projeto Clicar, Tiririca himself told many stories as well, filled with many wild characters. His stories evoked the many hazards that he encountered with the "friends" he associated with on the streets. Jorge and he wrote down some of these stories. During that period at Projeto Clicar, Jorge wrote the following account, which is typical of these stories describing the world they inhabited outside the program.

### The Adventures of Stubborn and Stubby<sup>2</sup>

Me and Tiririca, we were in Amador Bueno [a district in the city of Itapevi, in greater São Paulo] sleeping at my buddy's house, when it was morning we went to ask for food at the COHAB [Companhia Metropolitana de Habitação de São Paulo, a housing project] in Itapevi, then we went back to my buddy's house. We thought about going to travel to Sorocaba [a city about 50 miles from São Paulo]. Once we got there we asked for food and a man invited us to sleep in his house. Me and Tiririca refused and that same night we went to Araçariguama [another city close to Sorocaba] once we got there we slept in the door of a bar. Then we asked for coffee at the bar and then stayed there until sunset. Then we were playing and cracking jokes, and a joke came up about Stubborn and Stubby and we began to yell at an old man, because he had called out to us, "Sleep dirty and wake up clean." Then Tiririca wanted to insult the old man with an ugly curse word and I grabbed him and said "Tiririca doesn't do that." Then two police vans went by, running, and that crazy guy here, Stubborn, wanted to cross the huge avenue and said "Okay, let's go back to Itapevi." Once we got there we asked for food at the COHAB and returned to Engenheiro Cardoso [the Itapevi train station] and so ended the story of Stubborn and Stubby.

The adventures of Stubborn and Stubby demonstrate the daily hazards that children like Tiririca and Jorge had to navigate on the street. It also demonstrates their ingenuity and inventiveness in negotiating transport to and from various nearby cities and adapting to the hazards of their varied urban environments. The grip of this precarious external universe was temporarily broken upon entering the space of Projeto Clicar. It was a place where children, within the inclusive context of the program's activities, became the masters of their own desires and inclinations. That is, they could choose which of the activities they wanted to pursue, change their minds and try out other activities, ally with friends or go off on their own. In fact, what generally happened at Projeto Clicar was that children (many of whom were not in school, had never been to school, or had only attended school for a year or two) entered a space where they were able to explore a variety of digital tools and other resources – board games, art activities, picture books, etc. Their participation in these activities was wholly voluntary. There was little or no formal instruction, in the traditional classroom sense, although there were always a number of educators at hand (including both certified professionals and trained university students) to offer guidance whenever they struggled with the digital or hands-on activities they were exploring or to help them learn to read or even to do simple physics exercises demonstrating concepts like momentum or inertia. For the most part, the children learned through interaction with each other and with the educators, who often participated with them as partners in the activities of their choice. The team of educators was specifically trained not to "teach" the children, but to pursue a pedagogy based on the works of Freire (1970), Vygotsky (1978), and Freinet (1990) – to ask questions, to guide them gently, to support their explorations and build on what they already knew.

In this sense, as previously noted, Projeto Clicar represented a "third space" (Gutierrez, 2008). Importantly for the young people of Clicar, they saw the space as their own. It was a time and place that was designed and designated specifically for them, where the social exclusion they encountered daily were temporarily suspended. It was a space where the children were free to set aside the masks of quasi-adult street toughness they usually maintained and, for a few hours each day, simply act like children (Underwood et al., 2003). In some ways, the concept of the "third space" is inadequate to encompass the experience of children like Tiririca and Jorge,

in that the concept presumes in the first place a “home world” (the world of parents, shelter, and food) and a secondary “institutional world” (the prescriptive world of school and other institutions of both social assistance and control). For children like Tiririca and Jorge, that first space did not exist, or was constructed situationally from day to day, and the second space was generally outside their reach, with the exception of local shelters where they could ask for food or a place to spend the night.

As Jorge’s story chronicles, Tiririca and Jorge were negotiating their way through remarkably extensive geographies as they navigated among the barriers, hazards, and sparse resources of their world outside Projeto Clicar. As they endeavored, both together and separately, to navigate this world, they did so at times as solitary individuals, and at times, as a small group or team of collaborating partners, pooling information and resources in a distributed system of cognition, similar to what Hutchins (1996) has described in the professional world of pilots and navigators. The world described by Jorge can be understood as a study in navigation. Again, as Hutchins notes, “The central computations in navigation answer the questions, Where are we? And if we proceed in a certain way for a specified time, where will we be?” (1996, 39). These two questions are matters of concern, especially given the hazards of trafficking in any environment.

In a relatively short period of time, Jorge and Tiririca, drawing on their combined experience and background knowledge, navigated a considerable distance, from the Itapevi section of São Paulo to two other smaller cities and back by hopping trains, begging in strategic locations, and evading potentially abusive and intrusive situations – all the time, negotiating between themselves a habitus of understanding and mutual association – an implicit code of stubborn affiliation, of fictive relatedness through mutual identification. Set apart from their usual world, Projeto Clicar represented an alternative social space – an alternative relational habitus, a new configuration of associations linking the self, tools, tasks, and others (Stone, Underwood & Hotchkiss, 2012) in collaborative exploration. It replaced Tiririca and Jorge’s world of intense and ever-present dangers, for a few hours a day, with a world of heartening possibilities.

### *Dinosaurs and Participatory Appropriation*

At the beginning of Projeto Clicar, especially during the time that Tiririca began to attend, the program’s objectives had yet to be defined specifically with respect to the work with individual children. The initial objective had simply been to provide a welcoming space where the children might feel free to come in off the streets and find something engaging, at least temporarily separated from the world of gangs and drugs and potential abuse. Soon after Projeto Clicar opened, Tiririca became a regular visitor. His time there offers an interesting example of the strategic way in which the educators at Projeto Clicar worked with individual children.

At first we thought he was there more for a lark or following friends and to have a shelter from the streets for a part of the day, and perhaps to be able to ‘small talk’ and be heard by persons, aside from his usual circle on the street. He was always very dirty and it was difficult, at first, to have a focused discussion. He was evasive in his answers to questions about the street and his life. In fact, I thought he had some sort of cognitive deficit.

He liked to draw and most of the time used only black pencil without coloring the drawings. When he switched to the computer, it was more to keep up with the others, because he could read and could help others read the rules and words on the screen. In the beginning were the games, but in time he realized that he could use the computers also to observe and study pictures of animals, and especially dinosaurs, which were what most interested him. He first began this study of dinosaurs by using encyclopedia programs on the computer, because at that time the internet access at Projeto Clicar was still precarious.

But he really liked to leaf through books, which at that time (at the beginning of Projeto Clicar) were few, purchased by the educators or gathered from their homes. They also began to borrow books from the small bookstore at Estação Ciência and one day, they received a considerable donation of new books, arranged in a large chest that was placed in a corner of the program's space. They called it "the reading corner." This trunk had been made by officials of Estação Ciência and despite its being a good and generous idea, it presented a problem in that it made it difficult to search for books. It was a deep box and the children found it difficult to search for the books that were in the back or at the bottom. Also, over time the trunk became too small as more and more books were acquired. As one educator noted, "So it became a common practice for us to leave exposed, at an appropriate height for the children, some books that we perceived to be the children's favorites. Among them were some encyclopedias with volumes separated by themes such as animals, plants, birds and dinosaurs."

Tiririca soon became interested in the book about dinosaurs. He studied the pictures of various dinosaurs and soon began to draw them. He began by using the images in the book as models. The educators set up a drawing table, where the children sat and did their drawings or modeled small sculptures while sharing their stories of the street. There, the educators placed all kinds of papers (usually recycled paper, which had been already been used on one side), black and colored pencils and colored pens at the disposal of children. Once a week, they offered modeling clay for the children. Despite being an activity that quickly brought the children together in excitement, it usually lasted only for a short time, because most of them had great difficulty in creating objects. The figures they made were generally the same creations: protruded figures that would fall in a lump on the table without remaining standing even for a few seconds, and a few small baskets containing clay balls.

Into this makeshift setting, Tiririca brought in his personal project of molding dinosaurs and other three-dimensional creatures, and in a short time he created a new paradigm for the arts table. Drawing on Tiririca's example, other children found that they could create viable figures themselves. The other children were delighted with their own newfound performance but still had a lot to learn. They usually gathered the different mass of colors and molded them together into large gray balls of dough. Tiririca, on the other hand, took care to work separately with different colors – for instance, he would select different colors for each of its creatures. He also used the gray dough in particular ways by using it to highlight especially minute details, and he once used a dog's tooth he had found to enhance the realism of one of his more elaborate dinosaurs. He brought a new way of working the dough to Projeto Clicar, and to encourage the other children further, he tried out both other materials and oth-

er ways of constructing three-dimensional objects with clay and papier mache and showed them to the other children. He always showed particular interest in knowing about the materials that were available and finding new ways to use them, unlike most of the children who, once they encountered difficulties with the different materials, would quickly abandon the art table. Tiririca took on the difficulties and resistances of new materials as a personal challenge and was very diligent in his attempts to figure out the best possible way to use the new materials presented to him, as a way to find new ways to work on his creations. He became a prolific artist, drawing and sculpting and experimenting with new media, every day. As a result, his art work began to accumulate.

I started to organize a folder so that there were always materials for his research, so that when he came to Projeto Clicar, we would not lose time gathering the pictures and books of interest. Also I started to gather his drawings in folders and his sculptures in a more secure place, so that at the same time it could be seen by all, without being destroyed by the other children. I explained that the dough is a very perishable material and so the sculptures were ephemeral. To preserve them for longer, we recycled glass boxes that had been discarded by the museum and we used them to create small exhibit windows, where they were displayed. Sometimes Tiririca would ask us to take one of them out of the display case, and he would remake or re-shape them.

When he was engaged in activities at the art table, many children liked to hang around, watching him work and trying to imitate him. But he worked at a rapid pace. When encouraged to teach other children how to make dinosaur sculptures, he was very quick in his work and had trouble explaining the process of kneading and molding the play dough or clay into well-formed sculptures and how to look at and make use of pictures in books that he brought to the table. Sometimes he was very self-absorbed in his own work. He focused on his work and ignored everyone around him. At other times, he was very affectionate, and was always hugging the educators.

He was especially close to one of the directors, who always challenged him or proposed activities with special results. Within this closeness and in their long daily dialogues, the theme of “dinosaurs” often emerged. “I cannot precisely remember when he started to have interest in dinosaurs, perhaps always,” one educator noted. In his first years at Projeto Clicar, his artwork was highly varied. “He drew little houses, helicopters and cars, streets and train stations and even strollers. Humorous, magical and skillful, he began to want to know more, to look at figures, to collect papers and books, to draw and play games about dinosaurs.” Yet among all the creatures he envisioned and captured in images, it was the depiction of dinosaurs that increasingly took hold and became more and more prevalent and pervasive in his drawings and his life.

In those days, he always drew the same picture, again and again, varying only with the type of paper he used or the amount of support we gave him. I decided to challenge him to draw an entire dinosaur. He told me that there was no paper the size of a dinosaur. I told him that maybe we had paper the size of a baby dinosaur. I looked for a roll of craft paper, unrolled a few meters of paper on the floor in an area close to where we were, and asked if the size was good for him. He quickly lay on the floor and using only a black pencil he began a large drawing of a dinosaur skeleton. Capriciously, he drew all the bones, starting at the head and ending with the tiny bones in the tail. When he finished, I gave him a black felt-tip pen and proposed that he trace over the lines of the drawing, because I feared that the lines he had drawn might have gone off in some parts of the paper and were very thin and tenuous. He drew without a model,

from memory, and very quickly. It was amazing! The drawing of the skeleton was perfect. I sat on the floor with him, admiring his creative ability and his newest work of art, and asking myself why an incredible kid like that lived a miserable life on the streets. He seemed to be very pleased with the result of his work.

When Projeto Clicar's new space was opened, this drawing was posted on one of the walls for a long time. Later, it was photographed and scanned, and it became part of an exhibition in honor of Tiririca. In fact, Tiririca's interest in dinosaurs was so great that it inspired the educators to obtain related books, software, and games. In the words of one educator, "Tiririca and his dinosaurs seemed to have lived together throughout prehistory and the Jurassic Era, such was his intimacy with the theme and his manual art." He was, everyone agreed, a genius at transferring a represented image seen on the page of a book into a three-dimensional figure, made with play dough. It conveyed details of the muscles, skeleton and limbs with such perfection that it made them seem almost real. In creating these figures, Tiririca learned to use multiple media.

On a number of occasions, the educators watched as he set up a large book about dinosaurs on the desk next to his computer. He opened the book to a certain page that he had marked, with an image he had previously found, representing the lateral view of a Stegosaurus. Then he searched the Internet for other images of the Stegosaurus – frontal views, views from various angles, images of the dorsal fin plates and other anatomical features. He sat and examined the Stegosaurus from various vantage points and began working the clay with his hands. His gaze would pass from the mass of clay to one of the pictures. He would glance up at one image in the book, then another on the computer screen, and then looked down at the clay, working the clay all the time. Then he would glance up at another image of the dinosaur.

Carefully, minute by minute, he manipulated the clay quickly, his hands working at a rapid pace until he had the consistency and general shape he wanted. Then he began to work on the details, his fingers working the clay quickly, his eyes occasionally glancing up at first one image, then another. Sometimes he would pause, and leaf through the book and open it to another page, and then search for another website with a better image, a new view of the dinosaur.

With his growing collection of drawings and sculptures of dinosaurs, he was gradually gaining more and more respect from Projeto Clicar's boys and girls, who were constantly asking him to teach them how to work with clay. One educator observed, "It made him feel important, and he developed quite a knack for doing that." He became increasingly supportive in helping the educators in everyday tasks and especially with the smaller children. He was also becoming more widely known to visitors from outside Projeto Clicar. At the request of various local schools and agencies, the Projeto Clicar educators occasionally hosted visit from groups of students and offered demonstrations or displays of the best of Projeto Clicar children's products. They filled a prominent area of Estacao Ciencia with varied drawings and products, and of course included Tiririca's dinosaur drawings, which he often made especially for the occasion. These exhibits and its creator of dinosaurs always made a dramatic impression on visitors. In this way, Tiririca's artwork came to be seen as an exemplar of the work of Projeto Clicar.



Yet while Tiririca appeared to become more confident as a result of his accomplishment and recognition, his imaginative artwork, focused on dinosaurs, which occupied most of his time at Projeto Clicar, did not, of course, eliminate or resolve the pressures he faced in his life on the streets. Projeto Clicar was open only six hours each day, six days a week. The educators would try to find shelter for young people like Tiririca, but it was not always possible. One day, when asked where he was spending the night, he answered, "In the cemetery." When asked where in the cemetery, he explained that every night he would find a sepulcher or one of the prominent family monuments that held several graves inside. He would find a dark place and squeeze inside. "Isn't that kind of scary?" one of the educators asked? Tiririca shrugged. "It's the safest place around." he said.

During the hours he was out on the street, as a relatively small person, even when he was among friends and "protectors," he was vulnerable to many kinds of dangers – bullies, gangs, drug dealers, predatory adults, hard-nosed policemen. As previously mentioned, Tiririca rarely commented on his life outside Projeto Clicar. The hazardous character of his life on the street was an obvious concern for the program's educators, but Tiririca usually kept silent about that world. One day, he sat at a table with art supplies and hunched over a drawing. He worked on the drawing by himself for a long time. This was not unusual for him, but he seemed especially quiet that day. The educators sat down at the table with him, watched as he drew, and asked him questions, trying to engage him in conversation, but he merely shrugged and kept drawing. They encouraged him to talk about what he was drawing. He pushed the drawing across the table to the educators, so that they could see it better. It depicted an endless city of tall buildings with tiny cars on the streets and tinier people on the sidewalks. Walking toward them, almost oblivious of their presence, as if unconcerned by such small creatures, walked a large urban Tyrannosaurus.

"Is that Godzilla?" one of the educators asked.

Tiririca shook his head. Then he glanced at them and pulled his drawing back and began to draw again. After a moment he glanced up with a wry smile.

"That's me," he said.

The educators questioned him further about what he meant. Did the drawing depict him as he thought he was or as he would like to become?

He shrugged and then answered, "How I want to be, I guess." They looked over the drawing with him, and asked about different parts of it. Did the dinosaur have a home?

"Anywhere," he answered. "Wherever it wants to."

"Is the Tyrannosaurus dangerous?"

"It can be. If someone attacks or threatens. For his own protection."

As the above interaction suggests, Tiririca's engagement with dinosaurs illustrates how he came to appropriate the informal learning activities of Project Clicar as his own personal agenda and thus transform the nature of his own participation in the program.

### *Dinosaurs and Anticipatory Appropriation*

While the concept of participatory appropriation accounts for *what* is happening with children like Tiririca in informal learning programs like Projeto Clicar, we turn to



the concept of anticipatory appropriation to demonstrate *how* this transformation occurs over time. When Tiririca was in his late teens, Petrobras sponsored the creation and construction at Estação Ciência of a large exhibit about oil extraction in Brazil. The Petrobras workers built up a large diorama depicting Brazil's varied geography, including mountains, hills, plains, and various coastal and marine ecologies. They then began to build miniaturized features representing the varied technologies used to extract oil from the earth and refine and deliver it for productive use. The exhibit slowly emerged from its wooden structural frame and paper maché and glass cover, as the workers refined the structure and carved and painted the surface into diverse geographical formations. Tiririca became increasingly fascinated by the process of building the exhibit and rendering its subject matter realistically. He kept wandering from the space of Projeto Clicar and he began to hover around the workers building the diorama. He regarded their work with a critical eye.

The Projeto Clicar educators encouraged him to interact with the Petrobras workers and smoothed Tiririca's relationship with the workers, who soon became very open to his observations and remarks. He pointed out flaws in their work and questioned the realism of certain sections of the diorama. The workers were intrigued by this small figure, very much a boy yet clearly strong and smart, with a hint of emerging manhood. They welcomed his critical comments with good humor and asked him if he could do any better. "Let me try," he said. The workers laughed but allowed Tiririca to continue to stand close to them and watch while they worked. He observed them and listened to their banter for long periods of time. Increasingly, Tiririca was able to talk shop with them and to critique their work in the language of their own craft. He began to point to specific parts of the exhibit and confidently assert that he could do as well or better by using particular tools and techniques in different ways. Commendably, the workers eventually invited him to step in and show what he could do.

In that moment, Tiririca's beaming smile masked his lifelong history of struggle and inner turmoil. The Petrobras workers encouraged him and said they wanted to hire him to contribute to the diorama. Tiririca seemed happy with the possibility. Unfortunately, on the scheduled date for him to start work, he did not appear. In fact, he disappeared from Projeto Clicar entirely for a period of time. The educators at Projeto Clicar were saddened but not surprised. It was a situation that frequently happened with many of the children who attended Projeto Clicar. They often did not meet scheduled appointments, and many of them, when asked, did not know what hour, day, month or year it was. Tiririca himself had appeared very interested in the diorama activity, but in returning to the streets, he may have become entangled in other activities or circumstances. Something may have happened to him in the streets at that time. He may have had trouble getting back to Estação Ciência, or he may have been inhibited by other difficulties. Perhaps he was diverted by his own fear or reluctance to become more deeply involved in something that would have been such a major change in his life. In any case, his ability to have been an everyday worker, appearing at regular times on a day to day basis would have been severely challenged by his life on the streets and the absence of a predictable place to live and sleep.

In other words, Tiririca at this time was on the verge of anticipating a future he had never imagined before, and his work with the Petrobras exhibit would have

represented a profound transformation of his participation in and beyond the world of Projeto Clicar. It would have represented a radical change away from everything that had been familiar to him. We can say that Tiririca, in navigating this possible transformation, was intensely involved in the act of dead reckoning, mapping out a possible cognitive and social trajectory for himself. Increasingly during that time Tiririca appeared to be trying to negotiate between his life on the street and his life at Projeto Clicar. The influences from those two worlds were often at cross purposes, yet blended into a broader relational habitus that took on some of the features of Projeto Clicar and extended them into a larger, not always so supportive context.

Tiririca changed over time. Little by little, his smile began to fade, his humor sometimes flared into anger, with little tolerance for the computer games, art projects, and even the interaction with other children. He began to show a growing resistance to the minimal limitations required of participating children in the project's space and an increasing uneasiness in relationships with friends and teachers. Spending time among drug users and consuming drugs himself were occupying more of his time, outside of Projeto Clicar, and gradually corroding that skilled, friendly genius for creating and relating. Once a boy-man, he was becoming a man-boy. During the periods when he was using marijuana and solvents (contact glue, acetone, etc.), very often he grew angry while at Projeto Clicar and would only with difficulty become interested in participating in some activity, alone or with other children. Over time, this pattern erupted more and more often. The excess of drugs and the withdrawal from drugs made him aggressive and aloof, and several times he arrived at Estação Ciência and suddenly attacked the security guards, who until then had always been his friends and allies, joking with him inside the museum and watching out for him in the vicinity around the museum. Sometimes he insulted the teachers and would break or damage the museum's equipment and Projeto Clicar's limited space, resources, and materials. His skill with clay began to disappear. He could not manage to mold the three-dimensional shapes, much less the precise characteristics of his specific creations. The pencil became an unfamiliar material in his hand, and hunched over a piece of paper, he could not manage to get out the initial features of his intended subject. Finally, Tiririca disappeared. There were many rumors about his return to social isolation, his escape from drug dealers to another city, and his death. But no one knew what had actually happened to him.

A few months after the definitive disappearance of Tiririca, Estação Ciência's visionary founding Director, Professor Ernst Hamburger, retired, and the museum was placed under new leadership. The new director, a geologist, brought to the museum's permanent exhibition two life-size replicas of two dinosaurs, *Allossaurus Fragilis* and *Anhanguera Piscator*. As one educator commented,

This saddened me, because Tiririca would have gone crazy with happiness to see them, but at the same time it prompted me to propose an exhibition of his artwork that would dialogue with the replicas. I thought of an exhibition to present to visitors at Estação Ciência, the re-creation by Tiririca of a *Tyrannosaurus Rex* and of course [including] his life story and his art. Therefore, in addition to convincing the director, I convinced some people of the staff to help put together the exhibition.

One volunteered to take many photographs of Tiririca's artwork, and his huge drawing of the skeletal system of a *Tyrannosaurus Rex* was scanned and set up as a large

panel, placed on the floor in the area next to Projeto Clicar, in a position where it would be seen along with the dinosaurs that were on display in the museum's main hall. Also, with the support of the maintenance staff, the educators and staff built a rustic box with wooden fruit crates to serve as a frame for illuminating one of Tiririca's dinosaur heads. They also made buttons of the dinosaur head to be worn by the educators, the monitors at Estação Ciência, and others working in collaboration with Projeto Clicar. The staff of Projeto Clicar also made panels that told Tiririca's story and created facsimiles of other drawings, digital photo, and sculptures. As an educator remarked,

My dream was [to create] a big panel on the facade of the museum building, with Tiririca's *Tyrannosaurus Rex*. I had a fantasy and felt almost certain that Tiririca would somehow be aware of the presence of dinosaurs at Estação Ciência, and would himself appear. Then he would have a big surprise. But he never came.

Tiririca's exhibition was open to everyone visiting Estação Ciência, and this audience was estimated at around 5000–6000 people per day. The exhibition ran for over six months. Since the huge *Tyrannosaurus Rex* was displayed in a panel on the floor in the area next to Projeto Clicar, it was common to see children lying on the floor, examining it, and people passing by carefully, in order not to step on the drawing. One of the educators noticed an increasing number of scuffs and scratches on the floor panel and tried for a while to protect it. She and one of the older children from Projeto Clicar, after the museum closed every day, carefully cleaned off the marks of the visitors' shoes from the floor panel. They kept at it for only a few days, however, before they both became convinced that the marks and scratches had already become an integral part of Tiririca's work. The summary of the exhibit, on a brochure made for the occasion and also posted in the museum, made the following comment about Tiririca:

He was the face of the dinosaurs. Heads, bones, mouths, teeth, fangs, large and small specimens, exuberant colors, black and white, paper, cardboard, wood, photographs, and many other textures record the story of a boy who lived most of his life in the streets, in graveyards, in abandoned railroad cars.

## Discussion

Tiririca created a body of work, collected and protected by Projeto Clicar's educators (since the boy himself had nowhere to keep his productions) – including drawings, paintings, murals, and sculpture. He used various media to develop his understanding of the skeletal and other anatomical characteristics of different dinosaurs. He often sat at a table with a book open to a picture of a dinosaur's frontal view while gazing at a computer screen with alternate perspectives of the same dinosaur. From these multiple views, he created clay sculptures of increasing anatomical accuracy. For Tiririca, these images represented a relatively safe alternative universe in which questions of sustenance and survival did not affect him personally. His depictions of dinosaurs in urban landscapes came to symbolize wishful images of himself as invulnerable, or at least formidable, in the contemporary landscape he himself inhab-

ited. His artistic experience culminated in his participation in the museum diorama, sponsored by Petrobras, about the extraction of precious resources from forbidding ecosystems.

### *Relational Habitus: Projeto Clicar as a Third Space*

Programs like Projeto Clicar represent a context in which disenfranchised young people can find a space in which they can take part in an unthreatening social world, a space where they can create their own imaginative world. The precariousness of the predicament of children like Tiririca is mediated by the relational habitus established at Projeto Clicar as shown in the children's own accounts and stories. In this sense, as previously noted, Projeto Clicar represented a "third space" which they viewed as their own (Gutierrez, 2008). It was a time and place that was designed and designated specifically for them, where the social exclusion they encountered daily were temporarily suspended. It was a space where the children were free to set aside the masks of quasi-adult street toughness they usually maintained and, for a few hours each day, simply act like children (Underwood et al., 2003). In some ways, the concept of the "third space" is inadequate to encompass the experience of children like Tiririca and Jorge, as represented in their story of Stubborn and Stubby, in that the concept presumes in the first place a "home world" (the world of parents, shelter, and food) and a secondary "institutional world" (the prescriptive world of school and other institutions of both social assistance and control). For children like Tiririca and Jorge, that first space did not exist, or was constructed situationally and precariously from day to day, and the second space was generally one from which they were excluded, with the exception of local shelters where they could ask for food or a place to spend the night.

As Jorge's story chronicles, Tiririca and Jorge were negotiating their way through remarkably extensive geographies as they navigated among the barriers, hazards, and sparse resources of their world outside Projeto Clicar. As they endeavored, both together and separately, to navigate this world, they did so at times as solitary individuals, and at times, as a small group or team of collaborating partners, pooling information and resources in a distributed system of cognition, similar to what Hutchins (1996) has described in the professional world of pilots and navigators. The world described by Jorge can be understood as a study in the navigational questions posed by Hutchins (1996).

In a relatively short period of time, Jorge and Tiririca, drawing on their combined experience and background knowledge, navigated a considerable distance, from the Itapevi section of São Paulo to two other smaller cities and back by hopping trains, begging in strategic locations, and evading potentially abusive and intrusive situations – all the time, negotiating between themselves a habitus of understanding and mutual association – an implicit code of stubborn affiliation, of fictive relatedness through mutual identification. Set apart from their usual world, Projeto Clicar represented an alternative social space – an alternative relational habitus, a new configuration of associations linking the self, tools, tasks, and others (Stone, Underwood & Hotchkiss, 2012) in collaborative exploration. It replaced Tiririca and Jorge's world

of intense and ever-present dangers, for a few hours a day, with a world of heartening possibilities.

### *Dinosaurs and Participatory Appropriation*

Tiririca's art appeared to represent an attempt to answer the first of the questions that navigation tries to address: "Where am I?" The drawing served the symbolic purpose of enabling Tiririca to get a fix on his own position within the larger world in which he lived outside Projeto Clicar. For Tiririca, dinosaurs represented powerful beings, vulnerable to extinction but fierce in their struggle to survive. In this sense, he invested his time and energy in dinosaurs as a way of investing in himself and in his own sense of integrity and strength and his own fierce drive for self-preservation. His cheerful, playful molding of three-dimensional creatures in the open, collaborative culture of Clicar appeared to coincide with an increasingly somber, pensive molding of his own character for a harder time to come. Perhaps Tiririca, as he grew older, began to envision the more daunting world of adulthood in which the challenges to his well-being and survival could be even greater. In short, he began to face the second navigational question: "If we proceed in a certain way for a specified time, where will we be" (Hutchins, 1996, 39)? In the world of navigation, this process is called dead reckoning – a term that reflects the chilling urgency of the process. In Tiririca's world, the question itself was formidable. It implied crucial choices and the cautious calculation of the many hazards and slim opportunities that lay in his future path. The activities at Projeto Clicar, leading to his discovery of dinosaurs and thus giving him the tools and relationships to encourage and pursue his knowledge and understanding of dinosaurs as symbolic creatures that represented his own self-identification and self-preservation in a hazardous world, supported Tiririca's cognitive process, his reckoning of his own course toward a possible future, or toward envisioning even the possibility of a future.

On the eve of Tiririca going to work on the diorama, he was on the verge of anticipating a future he had never imagined before, and his work with the Petrobras exhibit would have represented a profound transformation of his participation in and beyond the world of Projeto Clicar. It would have represented a radical change away from everything that had been familiar to him. We can say that Tiririca, in navigating this possible transformation, was intensely involved in the act of dead reckoning, mapping out a possible cognitive and social trajectory for himself. Increasingly during that time Tiririca appeared to be trying to negotiate between his life on the street and his life at Projeto Clicar. The influences from those two worlds were often at cross purposes, yet blended into a broader relational habitus that took on some of the features of Projeto Clicar and extended them into a larger, not always so supportive context.

### *Dinosaurs and Anticipatory Appropriation*

This portrait of Tiririca suggests how his dinosaur art became, for a time, both a multi-media exploration of personal agency and interpersonal relatedness and a means

of exploring, expressing, and navigating his own predicament of place – moving back and forth between the open, playful world of Projeto Clicar and the rigidly closed world that Tiririca faced outside its protective walls. The educators at Projeto Clicar mobilized their resources to maximize a productive encounter with Tiririca. They found tools, tasks and activities that enabled Tiririca to reflect on his own circumstances and experiences and to re-envision his precarious world. Beyond that, they tried to establish enduring relationships with Tiririca, to offer him the support he needed to build a new framework for his existence. Given his ambivalence, it was an arduous process on both sides.

Throughout these six years [that] we had been in contact, he had always asked us for help, but it was always a cloudy request. At the same time that he showed weakness, abandonment, and a lack of perspective on life, he also signaled an anguish that life for him was uniquely and exclusively the way he lived, and our views merged in the presence of a boy who, in spite of everything, carried within himself both a drive and an empty feeling of refuge.

Clicar's educators attempted to turn this vicious circle into a rising gyre, that built upon his cycles of fierce energy and placid depression and lifted him toward greater artistic and technical skill and higher self-awareness and purpose. They built a scaffolding of activities and relationships around his internal struggles. That is, they worked closely with him and others to co-construct a relational habitus that represented an alternative to his history of hazard and reactive subsistence, a collaboratively envisioned image of himself and others that drew upon his resilient character while providing cognitive and social tools to imagine and project a future of greater strength and agency. Projeto Clicar provided a neutral, open space that enabled Tiririca, through his changing participation in the program, to anticipate and explore a larger world while holding in suspension the ever-present cloud of potential recrimination and abusive exploitation that pervaded his life on the streets. The encouragement and tangible support for his newly found artistic expression enabled him to imagine and envision a different world, and to create images that represented, for him, a new persona of strength in a formidable world – a self-projected image of fiercely independent yet highly social engagement with others in that world. It allowed him to lower his guard and see others – at least some others – as possible partners in his struggle for survival. Tiririca's agentic exploration of artistic activities and resources at Projeto Clicar tenuously offered him a new perspective on his world – not only as the source of ubiquitous danger (which his world always remained), but as a resource for productive engagement. Yet Tiririca's journey through this alternative universe was by no means free of conflict or struggle. His navigation between the scaffolded activities and opportunities at Projeto Clicar and the ever-present hazards and violence of the streets was always highly precarious, with the potential for greater agency and purposeful activity almost within reach, again and again. It was a long, difficult interactive process for everyone involved.

The endlessly problematic nature of the educators' work at Projeto Clicar made them reflect on their own pedagogical practice. "When working with these children, we often hear what is not said, we are deaf to what is spoken, we are blind to what is in front of us, and yet we see the invisible, have the feel for the impalpable, yet we are insensitive to the visible ... we are dealing with human lives living in an in-human state." Out of these reflections emerged realizations about their collaborative



work as educators in a distributed system of cognition comparable to the process of navigation. The directors of Projeto Clicar, while garnering resources, developing and implementing pedagogical strategies, and training others to use those strategies with children who constantly demonstrated the most intense and formidable need, themselves had to contend with the issue of personal and collective agency. As one of the directors said,

Each one of us, in our own way and without knowing and realizing it, were key parts to our shared attitude 'to do something for Tiririca.' It was important to realize that despite the reach of our experience and of being "directors," we were also powerless and we are not perfect because we are dealing with human lives in an inhuman condition.

As the collaborative tasks with the children energized their sense of power over their own learning, the collaborative work of the educators and directors in engaging with both the children and each other, expanded the reach of their professional and personal knowledge and increased their capacity to have an impact. This collaboration established the interactive framework of Projeto Clicar, for both the educators and the children involved. As one educator noted, "In an absurd situation of human limitation, there was the greatest lesson, and it was a huge certainty; we are a team, where the strength of each of us adds up and makes us special."

## Conclusion

The example of Projeto Clicar, we suggest, offers a case in point of both the potential and limits of extended education for young people who face persistent social exclusion. In this article, we have followed one child's development and focused on his problematic navigation – geographical, social, and cognitive – of the circumstances in which he tried to construct his life, both his experience within Projeto Clicar and his troubled encounters with the world on the streets outside the walls of Estação Ciência. We have also hinted obliquely at the comparable yet diverse navigational experiences of several other children in negotiating between the world of Projeto Clicar and the world of the street. By giving young people power over their learning, Projeto Clicar minimized hierarchical pedagogical relationships and situated the children's learning as a mutual negotiation among themselves and the program's educators. This negotiation entailed an openness to the pace and direction of others' learning and increased their sensitivity to each other's learning goals – a social process that involved their careful anticipation of each other's actions in co-constructing both their own knowledge and their learning paths together, while giving others the freedom to navigate their own interests and constraints.

Tiririca's story reveals the persistent, day-to-day design work of the educators at Projeto Clicar. This work was based on their conscious attempt to envision, propose, develop, and adapt learning activities specifically designed for individual children – activities that provided those children with evidence of the strengths and capabilities that they themselves possessed, despite the extreme situations in which they lived every day. In this way, this article has explored both the capacities and the limita-



tions of the transformative ontological complicity established among participants in a program like Projeto Clicar. Tiririca's story is not a success story, in the sense that the program did not and could not eliminate the external pressures and exigencies that ultimately overwhelmed and overcame Tiririca. The program was not able to set him on a permanent, alternative path to a new livelihood and a productive adulthood beyond its sheltered space.

Yet while the program could not compete with the almost random and ever-present hazards and relentless violence of his life on the streets, the program was efficacious in offering Tiririca the lived experience of a highly integrative motor-visceral activity that framed the context for his own cognitive development. As the relational habitus of Projeto Clicar – the tools, relationships, activities, and the occasion for doing artwork – enabled him to anticipate and incorporate (that is, make physically and psychically his own) the translation of multiple visual images in various media to tangible, pliable materials in order to envision and produce artistic figures that were both representational (recognizable and meaningful to himself and others) and perhaps even symbolic (of his own sense of being in the world), the program's activities offered Tiririca a window into an alternative universe of discourse, separate from the grim, reactive world of his life on the street. In short, what Projeto Clicar gave Tiririca was an experience that he otherwise would never have had in his short life. The activities that Projeto Clicar's educators developed for him, and his own talent for and engagement in those activities, gave him, for a time, a sense of belonging and pleasure, a feeling of delight and amazement at the ability of his own hands and his own mind to re-create the precarious earthly presence of fiercely resilient, endangered beings roaming a perilous planet.

## Endnotes

- 1 The authors wish to thank Professor Ernst Hamburger (Universidade de São Paulo), celebrated physicist and Director of Estação Ciência for many years, and Marcos Matsukuma (Universidade de São Paulo), without whose support this article and the research on which it is based could not have been completed.
- 2 In the original Portuguese, the names are Teimoso and Teimosinho, which in this context we translate as "Stubborn" and "Stubby" (or "Little Stubborn"); the latter translation captures (we hope) the diminutive form while conveying the close mutual identification in the names the two boys collaboratively invented.

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## **Report on the Leisure-time Pedagogy Network at the NERA Congress March 23–25 2017 in Copenhagen, Denmark**

*Björn Haglund*

The NERA (Nordic Educational Research Association) congress is a yearly congress that is hosted by one of the different Nordic countries. NERA was founded in 1972 and should now be seen as a meeting place for educational researchers in the Nordic countries. The association strives to stimulate educational inquiries and supports the use of research to enhance education in different areas. The association also strives to both function as a platform for Nordic researchers and to support collaboration between them and the international community (for more information of NERA visit the home site at <http://www.nepf.net/>). Although the focus is directed to research that involves the Nordic countries researchers from other parts of Europe and sometimes Asia and America also participate. This year about 700 participants attended the congress in Copenhagen.

NERA consists of 25 different networks and every network have their own special interest even if this sometimes means some overlapping between focus of interest. Every network has a convenor who is supporting the board by administrating, and sometimes also reviewing, abstract applications before the conference, administrate the Network web page, organize a network meeting during the conference and hand in a network report after the conference.

The formation of Network 17, Leisure-time Pedagogy, started 2012 since researchers from some of the Nordic countries during some time had experienced a need to focus on after-school activities. Until then research and presentations directed to after-school activities had been incorporated in other networks, for instance the Early Childhood Research Network. The NERA board accepted the appliance for starting a new network and the first conference where the Leisure-time Pedagogy Network was included was in Reykjavik, Iceland, in 2013 (for more information of Network 17 go to <https://neranetwork17.wordpress.com/>). Usually 10 to 15 attendances visit the presentations (about 9–15 presentations have been common) at the Network 17 sessions. This means that the network is rather small but also that it has survived the first important and vital period as a self-dependent network.

The conference in Copenhagen 2017 included 12 presentations within the Leisure-time Pedagogy Network (two contributions had, however, to be cancelled). The presentations only included researchers from Denmark and Sweden this year and it

became obvious that the focus of interests, although methodological and theoretical perspectives diverged, were similar. The space available for a thorough description of the presentations is limited and the following report should only be seen as a brief and somewhat broad categorization concerning the content: *New governmental policies and the resulting educational practice, Children's perspectives, Children's identity formation and Theory discussions.*

Six of the presentations should be seen as belonging to the first theme, focusing how governmental policy in different aspects influence the educational practice. Five of these contributions were focusing on how staff, working in after-school service/primary school, realized their work relative recent established educational reforms. These presentations comprised both Danish and Swedish research where the Danish presentations took their points of departures from the 2014 educational reform where staff, pedagogues, in Danish after-school services were invited to participate in curriculum based school activities in a more comprehensive way. Noer Ahm and Ringskou focused on how leisure-time pedagogues can create varied learning environments in school based on learning processes of aesthetic animation while Gravesen and Ringskou discussed how the increasing stress of qualification challenges the leisure time pedagogue's work when they try to handle the balance between qualification and inclusion. Ankerstjerne also focused on what pedagogues at leisure-time centres do in school and in the leisure-time centre but also which role they settle into and which role they are able to see themselves in. The Swedish contributions also problematized the increasing stress of learning within their activities. The presentation by Boström, Augustsson and Haglund focused how political decisions are mediated between the formulation and implementation arenas, i.e. how staff at leisure-time centres perceive their steering documents and implement their learning mission. Lager discussed teaching, a new concept within leisure-time centre activities, which means a wholeness of care, learning and development mixed together in the leisure-time centre. While these presentations all focused how staff at afterschool services acted and reasoned concerning their work the presentation of Andersson and Klerfelt focused principals and how they perceived and organized leisure-time teachers work in the leisure-time centre as well as with a practical/aesthetic subject in school.

Two Swedish presentations, in whole or in part, stressed children's perspectives concerning their perception of different aspects of afterschool services. Fastén discussed how children understand and construct the conceptions of School, Leisure-Time Centers and Spare Time and what differences and similarities they highlight concerning these conceptions. Ljusberg, Elvstrand and Söderman Lago used the concept children's agency to portray teachers and children's reasoning concerning independence in school-age childcare.

The presentation by Pugh and Svane Hansen focused how Danish children used Youtube as a digital tool to actively unfold themselves in everyday life. The results were expected to gain knowledge of children's digital behavior, experience and contributions and at the same time get insights in how children influence – and are influenced by – other digital users. The last presentation, by Hammarsten, focused a discussion concerning Lefebvre's theory of critical spatial analysis. The theory was

the point of departure for her study that aimed at examining children's experiences of a Swedish forest garden regarding *perceived space*, *conceived space* and *lived space*.

At the end of the conference every network received a slot in the time schedule to form a network meeting. The meeting regarding Network 17 was directed at, amongst other things, discussing the performed presentations, opportunities to publish in the IJREE journal, possible future collaborations concerning both visiting different universities and different national networks. Next NERA conference will take place in March 8–10 2018 at the University of Oslo, Norway. It would be a great opportunity for researchers outside the Nordic countries to participate and contribute since NERA is open for all researchers interested in educational research in the Nordic context.



# **“International Workshop on Empirical Educational Research – Extended Education”**

*Ann-Kathrin Mücke-Gerhardt & Sabine Maschke*

From 28 November to 1 December 2016 an international workshop on empirical educational research in the field of extended education took place at the Philipps University of Marburg. The workshop was organized by Sabine Maschke (Marburg University), Ludwig Stecher (Giessen University) and Ivo Züchner (Marburg University). It aimed at doctoral candidates with a research focus on extracurricular and out-of-school time educational research (extended education). Leading international experts from the field of extended education research were invited and reported on the latest developments in this field of research in their country and answered the questions the young scientists had concerning their dissertation projects.

During the workshop the junior scientists got the chance to present their qualification work – in the plenum and in small groups – and discuss it with the experts. Each expert was assigned to a group of three to five attendees and provided them in-depth advice. The groups were put together in regard to the experts’ area of expertise and the attendees’ research focus. Questions of the empirical feasibility of innovative research ideas and the selection of appropriate research methods were in the focus in particular, including perspectives of international comparative research.

With the workshop, the organizers aimed to deepen the cooperation and to extend the knowledge on this comparative field of research. After organizing some international conferences on the topic of extended education since 2010 and launching the International Journal for Research on Extended Education in 2013, promoting early stage researchers was the next step of the Network for Extracurricular and Out-Of-School Time Educational Research (NEO ER, which is now an IRN in the WERA, see the next contribution in the developments section) as well as to institutionalize and strengthen international research in the field of extended education.

# The Newly Launched WERA-IRN EXTENDED EDUCATION

*Marianne Schüpbach & Ludwig Stecher*

## Research Topic

From childhood to adolescence, young people enroll in various public or private forms of educational arrangements outside regular school time. They participate in school- or community-based programs, forms of private tutoring, or after-school activities like art courses, or they attend extracurricular activities at all-day schools.

In learning societies today there has been an increase in out-of-school and extracurricular learning in childhood and in adolescence compared to the past. The last 10 to 20 years have seen numerous efforts to expand institutional learning and care opportunities to supplement (traditional) schooling in almost every modern country in Europe, North and South America, Asia, and Australia.

In all of these continents and countries, these activities and programs focus on the social, emotional, and/or academic development of children and young people and are educationally structured to make it easier for the participants to learn specific contents.

Extended education programs have many common institutional features as well as a number of parallel education-related pedagogical problems, regardless of whether they are extracurricular activities at German all-day schools, summer camps in the United States, or activities at Swedish leisure-time centers, for example. Thus, international research focuses on similar problems and similar features of these educational settings. In the following, we outline two of these features:

(1) As with classroom teaching, activities in the area of extended education are (as a rule) educational settings that are designed by adults that are (often) supervised by schools or community institutions and focus on definable – albeit broad and certainly diverging – learning goals in both the cognitive and psychosocial areas (support orientation of programs and activities). These activities and programs differ from classroom teaching in that: (a) they are not necessarily taught by regular classroom teachers in most countries, (b) there is generally no performance assessment with grades, (c) in some cases they are organized in mixed-aged groups, (d) partic-

ipation is usually voluntary (optional character), (e) they are usually only subject to a low level of curricular requirements, and (f) they often offer children and youths more freedom of choice and opportunities to participate than school does. Thus, among other things, extended education activities open up new and different possibilities for learning and development within but also outside curriculum-mandated school topic areas and subjects.

(2) Additional collaboration between schools and out-of-school partners, which are often part of out-of-school activities, helps strengthen the lifeworld-orientation and takes interests and aptitudes of students better into account.

## Network for Research on Out-of-School Time and Extracurricular Educational Research (NEO-ER)

In recent years a high demand for scientific information in the field of extended education has risen with the extensive implementation of these state and private programs and activities. For example the effectiveness of these activities and programs, their successful pedagogical design (quality) and also possible consequences for education policy are brought into focus. While educational research in several countries increasingly deals with the potential and problem areas of those activities referred to as “extended education”, so far there has been no continuous exchange on an international level especially of scientific information in this field.

The first steps have gone to establish this research field in 2010. An international network with a group of international experts was launched, the *Network for Research on Out-of-School Time and Extracurricular Educational Research* (NEO-ER). Today, this network comprises experts from Germany, Switzerland, the Netherlands, Sweden, UK, USA, South Korea, Japan, Taiwan and Australia. Since 2010 this group organized four international conferences (two in Giessen, Germany and two in Seoul, South Korea; we reported on these conferences in the IJREE) and published an international volume on research on extended education (Ecarius et al., 2013). In 2013 we launched the *International Journal for Research on Extended Education* (funded by the German Research Council) and organized an international workshop for postgraduate researchers in this field in 2016 at the University of Marburg in cooperation with the University of Giessen, Germany, by Prof. Dr. Ludwig Stecher, Prof. Dr. Sabine Maschke and Prof. Dr. Ivo Züchner (see the short report in this issue). The workshop was funded by the German Federal Ministry for Education and Research.

To strengthen and to broaden the bases of international collaboration in the research field of extended education furthermore and to synthesize the state of research worldwide the NEO-ER group applied for becoming an International Research Network within the World Education Research Association (WERA). The application was successful. In April 2017 the NEO-ER network turned into the WERA-IRN EXTENDED EDUCATION. The organizers of the WERA-IRN EXTENDED EDUCATION are Marianne Schüpbach, University of Bamberg and Ludwig Stecher,

University of Giessen. The new WERA-IRN is a collaborative group of scholars working on this research topic.

## The WERA-IRN EXTENDED EDUCATION

*World Education Research Association* (WERA) is an association of major national, regional, and specialty education research associations, among other things dedicated to developing networks (see <http://www.weraonline.org/>). The purpose of *International Research Networks* (IRNs) is to advance education research worldwide on specific scholarly topics.

From November 30, until December, 2, 2017 the first WERA-IRN EXTENDED EDUCATION Conference *Extended Education from an International Comparative Point of View*, was organized at the University of Bamberg, Germany. We will report about the conference in the next issue of the IJREE. The aim was to bring together different research perspectives, to synthesize the state of research worldwide in this new field of EXTENDED EDUCATION, and to initiate an international research direction on a comparative point of view (Congress website: <https://www.uni-bamberg.de/grundschulpaed/extended-education-2017>). In Bamberg the first business meeting of the new WERA-IRN EXTENDED EDUCATION has been taking place. Join the WERA-IRN EXTENDED EDUCATION at <https://wera.site-ym.com/page/ExtendedEducation>.

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# Extra-curricular Activities in Spain: Sports-related Activities and their Personal and Academical Implications

*Ramon Cladellas Pros & Antoni Castelló Tarrida*

## Introduction

Activities out of school time are one of the most debated issues in Spain. Which kind of activities (sports, drama, intellectual), how many and how much time is devoted to them are central concerns from school point of view, as well as for their interest in family and social life.

These activities had came to be a complement of many boys' and girls' school day. In some cases, their parents feel worthy for their education having and extended time in instructional setting (Osgood, Ander & Shaffer, 2005). Some other parents appreciate the opportunities of formation and social interaction these activities offer (Mahoney & Vest, 2012).

In any case having extra-school activities is not necessarily associated to successful performance, either in school or the activities themselves, since some children may feel tired, have their sleep-time reduced, fail to keep concentration or even show stress (Cladellas, Chamarro, Badia, Oberst & Carbonell, 2011). In Spanish society is very common that the workday ends late in the evening, many hours after school is over. Thus is not possible for most of them to take care of their children until they are back at home. This situation has made extra-school activities a flourishing big business, existing a profusion of chances for keeping children and youngsters occupied – and controlled – immediately after the school day. Most of these activities could be placed in a midpoint between children education and guardianship (Varela, 2006).

## Extra-curricular activities in Spain

Among extra-curricular activities, these that involve cognitive effort, such as languages, arts or music, should be distinguished from, those that are mainly physical, most of them sports-related, like football, basketball, tennis or dancing.

Activities performed by Spanish students from compulsory education – both primary and secondary cycles – usually include a single type, typically related to sports; only 14.6% of the children population are involved in more than two kinds of activities, being always one of them sports (Cladellas, Clariana, Badia & Gotzens, 2013; Cladellas, Clariana, Gotzens, Badia & Dezcallar, 2015). Some of these activities can take place in schools, whether private or public, after classes, as well as in facilities provided by the town-council or private academies and sports clubs. However, many schools, particularly private schools, decide upon a minimal number of students being enrolled in the activities, something that limits their actual offer. It is quite exceptional that different schools of a given city coordinate to share their students and specialise their offer in order to encompass a wider range of activities. On the contrary a small set of extra-curricular activities are customarily repeated in most of the schools. The consequence is that many private institutions not linked to schools cover a large part of the after-school options. That implies moving from one place to another and, frequently, further economical expenses.

In any event, extra-curricular activities are a good opportunity to establish social bonds with children who are not their school-mates. Cases that do these activities alone (e.g. having a tutor exclusively for them) are very few. Moreover, the contact with relatives or with their ordinary teachers is also very scarce.

## Prevalence of extra-curricular activities

In the last fifteen years, extra-curricular activities have had a notorious increase in Spain, shifting from a 69% of the children at the beginning of the century to an almost 90% nowadays. This gain in participants is obvious through the few studies developed: Pérez-Díaz, Rodríguez & Sánchez (2001) computed, in one of the first estimations, that 69% of primary and secondary education (i.e. students from 6 to 16 years old, encompassing the compulsive educational range) did, at least, one extra-curricular activity per week. Trilla & Rios (2005) indicated that 77.5% of primary education students practice some extracurricular activities along the academic year. Another study fostered by Barcelona town council (Fundació Jaume Bofill, 2006) focussing on primary education (i.e. 6 to 12 years old children) computed that 77.8% of the students carried out extra-curricular activities, existing just slight differences between girls and boys (77.1% and 79%, respectively). An ensuing study sponsored by Extremadura regional government (Hermoso, García & Chinchilla, 2010) stated that primary education students involved in extra-curricular activities are 84.2% of the population, being 74% girls and 94.4% boys. Finally, a study accomplished by Cladellas et al., (2013) in Catalonia showed that 86.7% of children had some sort of extra-curricular activities. Although the general percentage was slightly larger than that observed by Hermoso et al., (2010), participation by gender was much more balanced, showing an 89.2% of boys and an 83.7% of girls. The figures are roughly the same currently, thus placing the prevalence of extra-curricular activities, in Spanish population aged from five to eighteen, between 80 and 90%, with five hours per

week devoted to such activities in average (Cladellas et al., 2013; Cladellas et al., 2015; Clariana et al., 2014).

Participation in extra-curricular activities changes significantly when age is considered. According to INCE (2001) extra-curricular activities have a lesser amount of participants from secondary education. For instance, in average, one out of ten students has no extra-curricular activities in primary education cycle, while this figure doubles – two students out of ten – in secondary compulsory education.

When the type of school is considered (private, public or charter) differences are also found, being the percentages 90%, 80.7% and 75.6% respectively (Arufe-Giráldez et al., 2017; Hermoso et al., 2010; Fundació Jaume Bofill, 2006). It is worth noting that in Spain the difference between public and charter schools consists in the latter type of school having the educational costs shared by parents and the State. Private schools, which fees are fully payed by the families, typically include high economical level students, while middle and low economical level students are typically disseminated in public and charter schools. Hence, it is a reasonable assumption that the economical costs associated to subsidized schools would limit further expenses in extra-curricular activities.

Parents' educational level is a strong predictor of the amount of students involved in extra-curricular activities. Different studies (Fundació Jaume Bofill, 2006; Cladellas et al., 2015) show that there exist a positive association between educational level of the progenitors and the proportion of children engaged in more than one extra-curricular activity. This result is partly explained by the general association of educational level and incomes, being those of higher educational level better paid, on average, enabling these families to afford the price of more extra-curricular activities. In any case, most of extra-curricular activities are not subsidized by the administrations, making the participation of children in them a considerable disbursement for their families.

## Physical and sports activities

As it has been previously pointed out, sports-related activities overwhelm and have also been more studied. A higher degree of well-being in students that practice sports has been observed by Dimech and Seiler (2011), alongside with some interesting benefits, like preventing delinquency (Gardner, Roth & Brooks-Gunn, 2011), having higher school marks (Cladellas et al., 2013; Cladellas et al., 2015) or having more opportunities for social interaction (Schafaer, Simpkins, Svest & Price, 2011), citing just some recent contributions.

Data considering the amount of practice show that physical activities that take place two or three times a week reach the 70% of boys and girls. This figure is similar to the result obtained in the United States of America, where 70% of male students played physical activities at least twice a week, though American girls seemed to be less involved in such activities, lowering the percentage to a 50% (Sánchez-Bayle, Aranguren, Cabello & Huertas, 1998; Steptoe, et al., 2002).



In any event, the kind of activity is clearly different and associated to gender. Dancing and ballet are the main activity for girls in primary education, while most of the boys at the same educational level practice team-sports (e.g. football, basketball, handball). Teenager girls usually prefer individual sports, like swimming or tennis, or team-sports with low contact, like volleyball. On the contrary, contact- team-sports, like football or basketball, are still the preferred choice for most male teenagers (Codina, Pestana, Castillo & Balaguer, 2016).

Many studies show that, in Spain, physical activities typically decrease as students grow up (Martínez-Gómez et al., 2010). This decrease is particularly intense among girls. Molinero, Martínez, Garatachea & Márquez (2011) observed that higher academic demands were associated with a decrease in the amount of physical activities recorded at mid-studies level, being this decrement significantly more intense for the girls. Some authors have considered commitment as a central variable to keep up playing sports (Sousa, Torregrosa, Villamaría & Cruz, 2007). High commitment seems to be associated with a more intense satisfaction when playing sports, thus preventing giving up the activity (Sousa et al., 2007). Similarly, Scanlan, Russell, Magyar & Scanlan (2009) state that persistence is a behavioural consequence of sports-commitment, defining it as a psychological disposition that represents “the wish and the will to keep playing that sport”. Conversely, the degree of commitment is going to be determined by how much amusement is obtained playing the sport, personal investment and sacrifice, the opportunities to be engaged in sports practice, the worthiness of alternative activities and the social pressures, whether positive or negative, associated to sports practice (Scanlan, Russel, Beals & Scanlan, 2003).

## Connections of physical and sports activities with school achievement

There are a variety of data sources that support that physical activities and sports provide many benefits. Beyond the social and personal benefits already declared, physical activities and sports produce beneficial effects on cognition and school performance. Specifically, results suggest that physical activities sensibly reduce stress, anxiety and depression, and improves learning and memory. The joint consequence of all these effects not only makes people healthier, but it also supports a higher school performance (Pastor, Gil, Tortosa & Martínez, 2012). Considering the effects of physical activity on specific subjects, Rasberry et al., (2011) hold that these effects are particularly sensible in Mathematics, English and Science. Hence it can be deduced that physical activities benefit those subjects that demand a high level of attention and concentration in the task (Rasberry et al., 2011). On the contrary, sports and physical activity seemingly have no effect on the marks in subjects such Physical Education and Arts. Physical Education should be expected to have many common variance with extra-curricular sports, at least considering the physical shape. The paradox, hence, suggests that it might exist deep discrepancies in the way sports are treated in the school and out of the school, though no further data currently pro-

vides some light on this point. The findings of Cladellas et al., (2013) are coincident with the conclusions of Mahoney & Vest (2012), showing that a moderate practice (between two and five hours per week) contributes the best to school performance, while less or more time devoted to sports has no effects or it may even be counter-productive.

## Practical recommendations

The results compiled in this paper shed some light on how to plan and make decisions about extra-curricular activities, in order to provide a personalised approach that fits each student. In infancy and early adolescence parents typically decide which activities their children are going to be involved in. If the only concern is filling the gap between the school-day and the work-day, ensuring that children are in care of an adult, there exist many alternatives that do not include an overload of activities that may deplete children's energy. In that sense, activities that have a low cognitive demand, like sports, have shown to be favourable up to a given point (up to five hours per week).

More hours hinder attention and concentration. Not to say that cognitively demanding tasks, like languages, music, chess or equivalent activities, directly use the same resources that are involved in ordinary school activities, thus accumulating cognitive fatigue. The best contribution of physical activities rely, on the one hand, in the improvement of health and physical shape (fostering blood circulation, removal of toxins and many other body betterment) something that supports a finer work of the brain at its very mechanical level. And, on the other hand, physical activities do not use the same kind of resources that cognitive activities do, particularly when physical activities are approached in a playful manner. On the contrary, a highly competitive approach may also involve cognitive resources, like high concentration and many decision taking, setting apart tiresome training. That is what makes competitive sports counterproductive for school achievement.

The recommendation for parents and educators are, therefore, quite clear: filling the gap between school-day and work-day is a legitimate goal, particularly in Spain where this gap is huge, but it is a misleading decision filling it with school-like activities. More activities of this kind imply more fatigue and worse conditions for quality learning. Similarly, when sleep time is reduced – for whatever the reason – brain restoration is compromised, yielding to lower efficiency. Playful activities can also fulfil the goal of having children under supervision, though not at the cost of exhausting their brains.

Sports and physical activities, moderately competitive, are good candidates to fit these conditions, alongside with many other activities that do not demand concentration. Of course, school-like activities (like music, languages and so on) can also be included but it should be thoroughly considered the expense of energy that they involve. In that case, the point is not taking advantage of the time gap to provide more instruction. Although other conditions are also present, school time takes into consideration how much time attention can be sustained and how much mental work

a student can produce. There are certainly individual differences, but neither attention nor mental works are infinite.

Many educational systems – being the Spanish one of them – focus on marks rather than on quality learning. That involves many hours of painstaking tasks related to homework or preparing exams, mostly aimed to memorizing. Setting apart the low quality of this kind of learning, it also takes a lot of time (Cladellas & Castelló, 2017). Hence, the combination of extra-curricular activities and school-related tasks that must be done at home may generate a schedule that stretches for more than eight hours a day, something that would probably be considered as unbearable for an adult. Fatigue is a predictable consequence and that worsens the quality of learning eventually achieved. Furthermore, if time is stolen to sleep brain efficiency is diminished and the quality of learning falls dramatically.

As adolescence goes on, both school and sports activities become more demanding, particularly when sports are competition-oriented. The consequence is that many students, mainly girls, give sports practice up. That entails losing the benefits of a moderate practice of physical activity and, consequently, also make school performance decrease. It should then be considered keeping opportunities of non-competitive physical activities, just as a source of well being. It requires changing some social values associated to sports, like reducing the value of winning. Implementing educational programs that foster a playful and healthy approach to sports would be a good starting point to keep the many benefits this practice carries with it: not only in school achievement but also in preventing delinquency, in expanding social interactions, and in a healthier way of life.

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## Recommended Readings in Extended Education

*Amina Fraij, Franziska Janzen & Stephan Kielblock*

At the first conference of the Network on Extracurricular and Out-of-School Time Educational Research (NEO ER) in 2010 in Giessen (Germany), a common vision was agreed upon, namely the conduct and international exchange of research on pedagogically structured provisions that go beyond the classes of the regular school curriculum and support the social, emotional and academic development of children and young people. In the following years, for this kind of research on extracurricular activities, afterschool programs, leisure time centres, out-of-school time provisions, private tutoring, and many more, the term *Extended Educational Research* gained more and more acceptance around the world. Since its initiation, the international Extended Education community made progress towards an international exchange, such as the publication of an edited book with authors from a variety of countries (Ecarius et al., 2013), the launch of the International Journal on Extended Education (IJREE), several international conferences, amongst them a workshop with experts specific for junior researchers, and to forth. Recently the network became an International Research Network (IRN) of the World Educational Research Association (WERA). Researchers within the WERA-IRN Extended Education have various backgrounds in different disciplines with a focus on diverse topics and methods, and their work is situated in different educational systems. Hence, the question appears, if there is a shared perspective on extended educational phenomena, or if there is a shared theoretical or conceptual foundation. In this short paper, we briefly investigate if the previously published papers within the past issues of the IJREE indicate such shared ideas by giving reference to the same records. The aim of the following investigation is to find out if such common references exist, and if so, what they are, and we would like to carefully recommend that these reference might be worth to study furtherly.

The reference lists of the papers that were published in the first eight issues (1/13, 1/14, 2/14, 1/15, 2/15, 1/16, 2/16, and 1/17) of the IJREE were analysed. Besides the peer-reviewed papers, all other papers that contained references were included, too, such as the introductions to the main topics, or for example articles in the Section Developments in the Field of Extended Education. 47 peer-reviewed papers and 10 non-peer-reviewed papers were analysed, which results in an overall number of 57 analysed papers. For analysis, all these references were copied in an Excel sheet and the origin of each paper was noted. The list contained 2,054 references. These



references were ordered with regard to the authors and year of publication. During this step, each reference was checked for spelling of the author names and general correctness of the record. If for example one book was referenced by several authors, but the references contain different editions, this was coded as one book. This applied to translations, too. For example the “Vygotsky, L. S. (1979). *El desarrollo de los procesos psicológicos superiores*. Barcelona: Grijalbo.” was identified as the Spanish version of “Vygotsky, L. S. (1978). *Mind in society: The development of higher mental processes*. Cambridge, MA: Harvard University Press.” As a *second* step, all references that appeared only within one single line in the list, were deleted. In other words, these references were only cited by one single paper, and were not a reference that was shared by different papers. After deletion, 488 single records remained in the dataset. *Third*, each reference was coded using the same code for the identical references and different codes for different references. This step revealed that in the data set there were 190 different references that were cited by at least two different papers. The *fourth* step was to consider that the same authors and author teams might have written several IJREE papers. A number of authors have published more than one paper in the IJREE. That one and the same author would use more or less a comparable set of references when writing different papers seems reasonable. Yet, this would mean that their references would appear several times in our list. Hence, at this stage the differentiation into different IJREE papers was changed into differentiate different authors/author teams. *Fifth*, only those references that were cited by minimum four *different* authors or author teams remained in the data set. This reduced the number of relevant references to 15. *Sixth*, the number of different authors or author teams citing each reference was counted and used as an indicator of its relevance. This indicator ranges from 4 up to 8 different authors or author teams citing one reference.

*Table 1. Relevant Literature According to the Examination of Reference Lists*

No. of different citations	No. of papers (n)	References
8	1	Eccles & Gootman (2002)
6	2	Durlak, Weissberg, & Pachan (2010) Vygotsky (1978)
5	2	Durlak & Weissberg (2007) Vásquez (2002)
4	10	Cole & The Distributed Literacy Consortium (2006) Ecarius, Klieme, Stecher, & Woods (2013) Fischer & Klieme (2013) Freire (1970) <i>(Kielblock &amp; Monsen, 2016)**</i> Klerfelt & Haglund (2014)** Larson (2000) Lauer, Akiba, Wilkerson, Apthorp, Snow, & Martin-Glenn (2006) Lave & Wenger (1991) Saar, Löfdahl, & Hjalmarsson (2012)

*Note:* \*\* = These articles were published within the IJREE. Italics = This article was the introduction to a Special Issue, which was circulated amongst the authors of the different Special Issue papers.

The result is depicted in Table 1. Most commonly extended education researchers referred to the work by Eccles and Gootman (2002) on ‘Community Programs to Promote Youth Development’. Also common books are ‘Mind in Society’ (Vygotsky, 1978) and ‘La Clase Mágica’ (Vásquez 2002). Other common references are the meta-analysis of after-school programs that seek to promote personal and social skills in children and adolescents by Durlak, Weissberg, & Pachan (2010) and the analysis of the impact of after-school programs that promote personal and social skills by Durlak & Weissberg (2007). The literature review indicated ‘The Fifth Dimension’ (Cole & Distributed Literacy Consortium, 2006), the ‘Pedagogy of the Oppressed’ (Freire, 1970), and the ‘Situated Learning’ (Lave & Wenger (1991) as being of importance, too. The edited book by Ecarius, Klieme, Stecher, & Woods (2013) on ‘Extended Education – an International Perspective’ is also in the list of relevant records. Within this book, particularly the chapter written by Fischer & Klieme (2013) was referenced separately by different authors/author teams, too. Other important topics were school-age educare in Sweden (Klerfelt & Haglund, 2014), Kunskapsmöjligheter i svenska fritidshem (Knowledge opportunities in Swedish school-age educare centres; Saar, Löfdahl, & Hjalmarsson, 2012), psychology of positive youth development (Larson, 2000), out-of-school-time programs (Lauer et al., 2006), and practitioner’s use of research (Kielblock & Monsen, 2016).

The topic of this short paper was ‘recommended readings in extended education’, and we presented a number of fifteen references that has been referenced by different researchers, whose research was published within the IJREE. The ‘recommendation’ was not supposed to mean that these references are of any major importance per se. Yet, we wanted to demonstrate that there are particular references that were used by different authors. Hence, we suggest examining these references critically in future investigations, and asking the question, what each of them might contribute to a deeper and shared understanding of extended education.

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# Metaphors of feast and famine: funds, resources and capital

Review of: *Funds of Identity: Connecting Meaningful Learning Experiences in and out of School* by Moisès Esteban-Guitart, Cambridge University Press, 2016.  
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*Julian Sefton-Green*  
*Deakin University, Melbourne, Australia*

Scholarship concerned with social justice and equity (usually using that language from the US), new literacies, inclusion, diversity and democratic principles of education draws on a key observation: that human beings engage in learning in all sorts of circumstances but that modern academic schooling only values and validates a very specific proportion of that. There are two simple consequences that follow from this. First, the political struggle for what counts as learning or what learning counts (Green & Luke, 2006) – in other words who gets to define the curriculum and socially valuable forms of knowledge (Young, 1998): and secondly, the progressive tenet of faith, building on work from Vygotski to Bruner, that forms of learning are interconnected and that it is more effective to build on learning in one domain/practice in order to progress in another. The last 30 years have seen intense struggle over this second principle with progressivists seeking to build on children's social and out-of-school knowledge and experience and a mixture of formalists and traditionalists (a simple noun to embrace all of these positions is far more difficult) advocating the explicit, the generic, and the academic as the best ways to advance children's learning.

The tension over this balance between decontextualised instruction and experiential reflection is complicated by the new politics of education which appear to offer social mobility and significant rewards to the educated at the expense of a far more precarious social exclusion awaiting those who fail in schools across the global North. It has proven very difficult to offer a disinterested social science focusing on learning that could objectively provide the best solution to these competing interests.

This book attempts to position itself within the "learning sciences" and seeks to offer a theoretical synthesis of the literature broadly speaking in the progressivist camp in order to make the case that finding ways to build on young people's identity work and that out-of-school experiences can offer a productive way forward for schooling. Its central metaphor is that of a fund – as in the literature around

funds of knowledge. As Esteban-Guitart explains this principle has its origins in an ethnographic account of Latino/Latina communities in the United States and in the work of Luis Moll and colleagues (Gonzalez, Moll, & Amanti, 2005; Rios-Aguilar, Kiyama, Gravitt, & Moll, 2011), developed a model for school reform building on local teacher and community-centred activities to build understanding and knowledge structures across these communities and formal education processes.

The original work was significant in that it aimed to redress deficit assumptions held by Anglo teachers about Latin American communities and used the term “funds” to suggest that the knowledge and experience held within families in these communities has a kind of wealth and is resource rich as opposed to deficit models which stressed how these young children came to school not knowing what their white middle-class counterparts did. Sociologists use the idea of “capital” particularly in the Bourdieu-ian tradition (Bourdieu, 1984; Bourdieu & Passeron, 1990) developing ideas of “social”, “cultural” as well as “economic” capital; for discussion see (Albright & Luke, 2008; Archer, Dawson, DeWitt, Seakins, & Wong, 2015). This book curiously eschews these more political conceptualisations of resource which may not help its ambition to offer an enlightened model of teaching and learning as a way to intervene in the kind of stand-off or tensions I have outlined above.

The author further extends the resource-based metaphor into the idea of “funds of identity”. Here again there are whole swathes of literature from social constructivism, e.g. Gergen & Shotter, 1989; Benwell & Stokoe, 2006, narrative identity e.g. Andrews, 2010; Wortham, 2005, social psychology e.g. Cote & Levine, 2002, the politics of identity e.g. Fraser, 2013), social practice theory e.g. Holland, Lachicotte, Skinner, & Cain, 1998 – and I could indeed go on – that don’t figure in this book and which approach the mobilisation and construction of identity in different ways that could feed as richly into the authors deployment of identity in classroom pedagogies – as in Moje & Luke, 2009.

The book is rather curiously located in the history of the author’s academic network and rather suffers from a lack of wider historical and theoretical reading. It tends to offer more of a synthesis of concepts jumping from Bronfenbrenner to Vygotski to “Connected Learning” to Moll rather like the path of a mountain goat more than systematically interrogating theoretical or conceptual questions and, as I have already suggested, is rather restricted in terms of its range and scope. It tells an account of successful deployments of funds of knowledge/funds of identity approaches in various educational institutions in Catalonia but these are described more from the deliverers point of view than as a deep or wide-ranging empirical account. Indeed, the book is rather slight both in terms of its length and its contribution to an interesting, generative and important aspect of how we might study learning and education systems within and across young people’s experiences in and out of school.

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## Authors

*Antoni **Castelló Tarrida***, Autonomous University of Barcelona, Developmental and Educational Psychology Department. Email: Toni.Castello@uab.cat

*Ramon **Cladellas Pros***, Autonomous University of Barcelona, Developmental and Educational Psychology Department, Main research interests: educational and evolutionary psychology. Email: ramon.cladellas@uab.es

*Amina **Fraij***, Justus-Liebig-University Giessen. Main research interests: quantitative research methods, social inequality. Email: Amina.Fraij@zfl.uni-giessen.de

*Lukas **Frei***, University of Bamberg. Main research interests: Effects of extended education on socio-emotional development, intervention studies. Address: University of Bern, Institute of Psychology, Fabrikstrasse 8, 3012 Bern, Switzerland; Email: lukas.frei@edu.unibe.ch

*Björn **Haglund***, University of Gothenburg. Main research interests: leisure, social systems, power relations and everyday practices at leisuretime centres. Email: Bjorn.Haglund@ped.gu.se

*Denise **Huang***, CEO, HLH Foundation, Taiwan. Retired Project Director, Senior Research Associate, University of California, Los Angeles, National Center for Research on Evaluation, Standards, & Student Testing. Main research interests: Extracurricular and out of school time on student learning, teacher and student motivation; parental influences; and building youth resiliency. Email: dhuang@gseis.ucla.edu

*Franziska **Janzen***, Justus Liebig University Giessen. Email: Franziska.Janzen@erziehung.uni-giessen.de

*Fuyuko **Kanefuji***, Bunkyo University, Department of Human Sciences. Main research interests: program development and evaluation for extended education, and effectiveness of education through the cooperation of school, family and community. Email: kanefuji@koshigaya.bunkyo.ac.jp

*Stephan **Kielblock***, Justus Liebig University Giessen and Macquarie University Sydney. Main research interests: Professionalisation of teaching practitioners; quality and effectiveness of extended educational contexts; education for all. Address: Justus Liebig University Giessen, FB03 – IfEW, Karl-Gloeckner-Str. 21B, DE-35394 Giessen, Germany. Email: stephan.kielblock@erziehung.uni-giessen.de

*Deborah La Torre*, University of California, Los Angeles. Main research interests: Afterschool programs, Impact of Informal Education Environments on Student Outcomes. Teacher Training, Math and Science Education. Email: [latorre@cse.ucla.edu](mailto:latorre@cse.ucla.edu)

*Seth Leon*, University of California, Los Angeles. Main research interests: Afterschool programs, Propensity Score Matching and Hierarchical Linear Modeling Techniques in the Evaluation Student Outcomes, Reading, Math and Science Education. Email: [leon@cse.ucla.edu](mailto:leon@cse.ucla.edu)

*Mara Welsh Mahmood*, Glen Price Group – El Cerrito, CA. Main research interests: Learning in sociocultural context; extended learning; high quality early education; linkages between social and academic competencies. Address: Glen Price Group, 719 El Cerrito Plaza, El Cerrito, CA. Email: [mara@glenpricegroup.com](mailto:mara@glenpricegroup.com)

*Sabine Maschke*, Philipps-University Marburg, Institute for Educational Science, Main research interests: out-of-school time educational research, qualitative research methods, research on childhood and adolescence, biographical research. Address: Philipps-University Marburg, Institute for Educational Science, Bunsenstr. 3, DE-35032 Marburg, Email: [sabine.maschke@staff.uni-marburg.de](mailto:sabine.maschke@staff.uni-marburg.de)

*Ann-Kathrin Mücke-Gerhardt*, University of Marburg. Email: [Mueckea@students.uni-marburg.de](mailto:Mueckea@students.uni-marburg.de)

*Wim Nieuwenboom*, University of Bamberg. Main research interests: quantitative research methods, health psychology, prevention of addiction. Address: Markusstrasse 8a, D-96047 Bamberg, Germany; Email: [wim.nieuwenboom@uni-bamberg.ch](mailto:wim.nieuwenboom@uni-bamberg.ch)

*Gil Noam*, PEAR Institute (Partnerships in Education and Resilience), McLean Hospital and Harvard Medical School. Main research and working interests: translating research and innovation to support youth resilience in educational settings. Email: [gilnoam@mclean.harvard.edu](mailto:gilnoam@mclean.harvard.edu)

*Dirce M. F. Pranzetti*, Universidade de São Paulo. Main research interests: Freirean and Freinetian pedagogical approaches; building multiple literacies and social identities; meditational processes in social inclusion. Email address: [dircepranzetti@gmail.com](mailto:dircepranzetti@gmail.com)

*Marianne Schuepbach*, University of Bamberg. Main research interests: Quality and effectiveness of extended education, primary school-age students, (multiprofessional) collaboration in school and classroom. Address: University of Bamberg, Chair in Primary Education, Markusstrasse 8a, D-96047 Bamberg, Germany; Email: [marianne.schuepbach@uni-bamberg.de](mailto:marianne.schuepbach@uni-bamberg.de)

*Julian Sefton-Green*, University of Helsinki. Main research interests: youth, media, technology, regeneration, community and educational policy. Learning and arts research. Email: [julian@julianseftongreen.net](mailto:julian@julianseftongreen.net)

*Ludwig **Stecher***, Justus Liebig University Giessen, Institute for Educational Science. Main research interests: extended education, social inequality, all-day schools, research on childhood and adolescence. Email: Ludwig.Stecher@erziehung.uni-giessen.de

*Maria Cecilia **Toloza O. Costa***, Universidade de São Paulo. Main research interests: Education for social inclusion; Freirean pedagogies of hope; cognitive and social development; child and adolescent development. Email address: cetoloza@usp.br

*Bailey **Triggs***, PEAR Institute (Partnerships in Education and Resilience). Main research and working interests: project management, public relations, social media, staff technology training.  
Email: btriggs@mclean.harvard.edu

*Charles **Underwood***, University of California, Berkeley – Graduate School of Education. Main research interests: Learning in sociocultural context; digital literacies and social identities; sociocultural processes in inter-institutional collaboration; mediational processes in social inclusion. Address: Graduate School of Education, 4423 Tolman Hall, University of California, Berkeley.  
Email: underwood@berkeley.edu

*Benjamin **von Allmen***, University of Bamberg. Main research interest: Effect of extended education on language development. Address: University of Bern, Institute of Psychology, Fabrikstrasse 8, 3012 Bern, Switzerland;  
Email: benjamin-adrian.von-allmen@stud.uni-bamberg.de