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This study is part of a multiyear research project on Jewish educational leadership. To see additional publications under this research project, visit the [Project Website](#).

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## Leaders as Learners:

### The Case for Continued Professional Development

#### Overview

Researchers and policymakers have advocated for the continued professional development (CPD) of school leaders as a key strategy for quality education and school improvement. In several states, there are explicit requirements for annual CPD of public school principals. Presently, in Jewish day schools, there are no standards or consistent expectations for leaders' CPD.

The goal of the study was to examine the relationship between leaders' CPD related to Jewish learning and teachers' classroom practices to promote students' Jewish learning and engagement. We defined professional development as any learning activity with well-defined sequence and objectives designed to enhance a leader's knowledge and skills. The study team surveyed and interviewed 36 school leaders. Additional data were collected from 330 full-time teachers who were directly supervised by the school leaders.

Results indicated that school leaders' participation in continued professional development significantly predicted teachers' classroom practice. In particular, the integration of Jewish learning into general education classes was linked to leaders' CPD. Independently of leaders' CPD, the professional experience of teachers and amount of guidance on pedagogical practices they received from leaders were associated with classroom practices.

The study identified three key actions that school boards, school associations, and program providers may take to motivate leaders' participation in CPD:

- (1) Helping leaders develop professional development plans
- (2) Offering professional tools for immediate application
- (3) Designing CPD programs for middle management

Additional research is needed to inform the intensity, scope, and rigor of CPD for leaders with varying levels of professional experience and job responsibilities.

## Introduction

***Experts and policymakers recommend that school leaders participate in continued professional development aligned with their annual performance goals.***

During the last 2 decades, continued professional development (CPD) for school leaders has gained support from researchers and policymakers.<sup>1</sup> Schools need leaders with the knowledge and confidence to accomplish the school's mission. In every professional field, keeping track of the most recent research and policy is an important part of continuous improvement. In schools, educational leaders need to continually refresh their knowledge to guide multiple aspects of school functioning for which they are responsible for (e.g., curriculum development, instructional and assessment practices, and implementing policies for a safe and supportive school environment).<sup>2</sup>

Experts have recommended that state policymakers invest in CPD for school leaders and tie leadership development to the annual performance goals for leaders.<sup>3</sup> CPD is defined broadly as learning opportunities with well-defined sequence and learning objectives designed to enhance a leader's professional competence, knowledge, and skills. CPD may include multisession programs, such as certificate programs and leadership institutes, as well as brief opportunities, such as professional workshops.<sup>4</sup> Legislatures in about half of the states in the nation have recognized the importance of CPD for school leaders. These states have set minimum CPD requirements for school administrator license renewal. For example, Iowa's Administrator Quality Program mandates that each district provides individual career development and professional learning plans for school administrators.<sup>5</sup> Washington appropriated funds for a principal support program, which requires principals to build the skills identified as part of their professional growth plans.<sup>6</sup> In Oregon, the Career Preparation and Development Task Force proposed a seamless system of professional development for teachers and administrators that begins with career preparation and continues through employment.<sup>7</sup>

***Program and policy development need research-based guidance for Jewish day school leaders' professional development.***

Jewish day school leaders have distinctive professional learning needs linked to their school mission and vision. This research brief focuses on professional learning related to Jewish engagement and learning. Educational leaders in Jewish day schools need to be equipped with the skills for leading the school community toward educational excellence in Judaic studies and ensuring that Jewish values are embodied in the culture of the school.<sup>8</sup>

A paucity of research evidence on CPD exists for Jewish day school educators and administrators. Several studies have examined the benefits of teacher professional development, including professional learning communities,<sup>9</sup> coaching by school leaders,<sup>10</sup> and mentoring by teacher leaders and external consultants.<sup>11</sup> The research on the participation of Jewish day school leaders in CPD is sparse. This information gap can make it a difficult task for funders in Jewish education and providers (e.g., school associations and institutions of higher education) to prioritize their investments in new CPD programs for school leaders and the refinement of existing programs. Although high-quality CPD programs exist for general education topics (e.g., mathematics and English

language arts) and management skills (e.g., budgeting and marketing), CPD specific to Judaic leadership has depended on investments by Jewish education funders.<sup>12</sup> Also, although standards for principal CPD exist in public school systems in many states, no guidelines exist for using professional development funds in Jewish day schools.<sup>14</sup> This research brief aims to provide research evidence to inform decisions about program and policy for Jewish school leaders' CPD.

## The Research Context for This Study

### ***Most Jewish day school leaders do not identify Judaic leadership as a professional development need.***

We have recently collected survey data from a nationally representative sample of 304 school leaders suggesting that many educational leaders who oversee both Judaic and general studies do not attend CPD related to Jewish learning.<sup>13</sup> The survey included questions that aimed to identify trends in participation in CPD related to the promotion of Jewish learning. The results showed that, on average, one-fifth of the survey respondents received professional development on at least one of the following nine topics within the 5 years prior to the survey:<sup>i</sup>

- setting goals for students' Jewish growth,
- assessing students' Jewish growth,
- enhancing the tefilla (prayer) experience,
- developing a Tanakh curriculum,
- developing an Israel education curriculum,
- developing a Hebrew language curriculum,
- integrating character education into the curriculum,
- designing experiential Jewish education, and
- creating schoolwide cross-curricular Jewish learning programs.

The data show two discouraging results. First, the number of school leaders who have not received professional development on the specified topics and are not interested in such programming is large and ranges from 54% (integrate character education) to 69% (develop Israel education curriculum). Second, of the leaders who received CPD, fairly high proportions—typically around a quarter or a third—found the CPD not helpful.

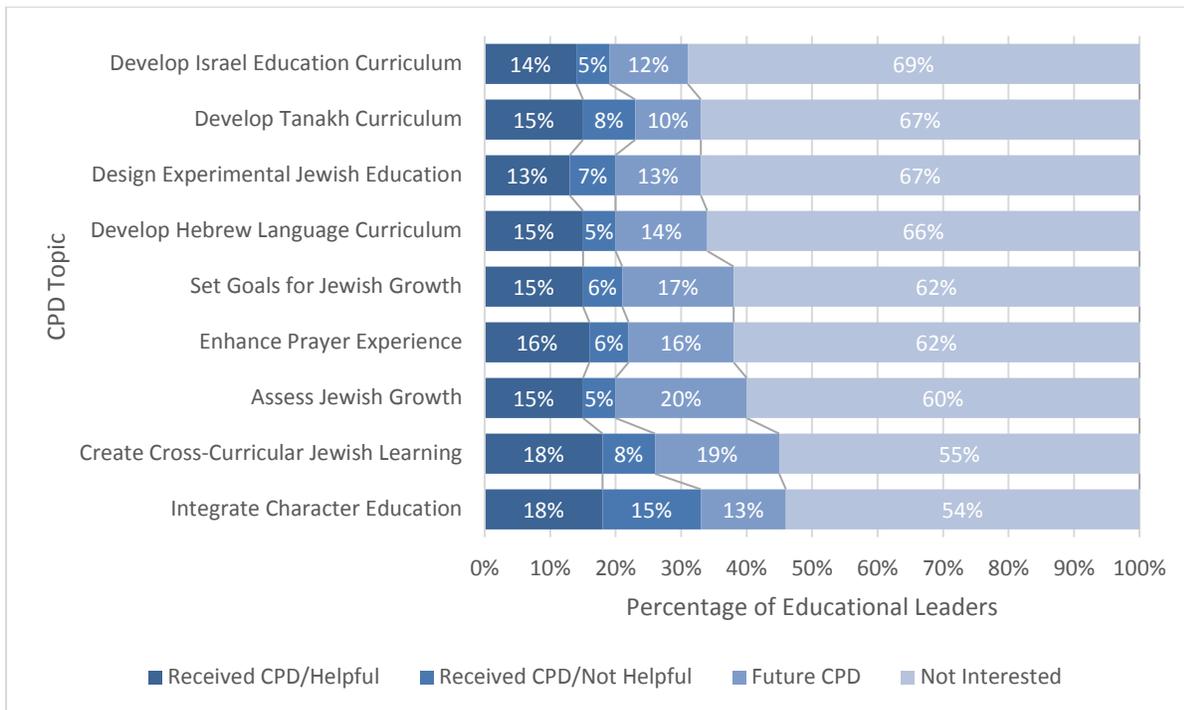
Interestingly, the two topics with the highest rates of interest in CPD are both relevant to the integration of Jewish learning into general studies: create cross-curricular Jewish learning and integrate character education into the curriculum. Nearly one-half of the school leaders recently attended or were interested in CPD on these topics, compared with one-third of the leaders who were interested in other topics.

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<sup>i</sup> Most (72%) of the respondents to this survey oversaw both Jewish and general studies. The remainder oversaw Jewish studies only (17%) or general studies only (11%).

Exhibit 1, below, shows the distribution of Jewish school leaders by four categories: (1) received CPD and found it helpful; (2) received CPD but did not find it helpful; (3) did not receive CPD but would like to attend programs on this topic in the future; and (4) did not receive CPD and not interested in this topic.

**Exhibit 1. Jewish Day School Leaders’ Participation in Continued Professional Development**



Other researchers also documented the low interest of school leaders in CPD related to promoting the school vision for Jewish living and learning. For example, in a survey of heads of Jewish day schools affiliated with RAVSAK, less than one-fifth of the respondents identified this topic as a professional development need.<sup>14</sup>

When asked about their professional development interests, school leaders listed a variety of topics, such as the following:

- General instructional topics, including differentiated instruction, project-based learning, critical thinking, and student assessment.
- Judaic studies topics, including Holocaust education, and using educational technology in the Judaic studies curriculum.
- Leadership and management topics, such as time management, marketing, and recruitment.

The above list confirms that school leaders’ learning goals extend beyond management skills. All study participants currently serve as instructional leaders, and as such need comprehensive training which can prepare them to serve as an instructional resource to teachers.

Some school leaders reported a preference for informal CPD. For example, some leaders reported that they often explored independent study opportunities, mostly using books. They believed that independent study was both more convenient (e.g., in terms of location and time) and well matched to the particular questions they wanted to explore compared with group learning in workshops and seminars. Also, school leaders preferred to invest in the professional learning of teachers and join the learning events organized for teachers, such as staff learning days facilitated by external consultants or study sessions in professional learning communities.

## Methodology

### *The study sample took part in a larger study that examined multiple facets of school leadership.*

The present study was undertaken with the assumption that in order to ultimately answer questions related to the value of CPD of school leaders, one must be able to link leaders' self-reports to data from other informants, such as the teachers directly supervised by the school leaders. As a result, the present study was designed to examine the relationship between Jewish day school leaders' participation in CPD and the self-reported classroom practice of their teachers.

Of the nationally representative sample that participated in the initial AIR survey administered during the 2014–15 school year, 50 school leaders agreed to participate in a follow-up study on school leadership during the 2015–16 school year. As part of this follow-up study, AIR researchers administered teacher surveys and explored the relationship between leaders' reports and teacher reports. This research brief on leaders' CPD is based on data for 36 school leaders for whom teacher survey data on classroom practices were available. The Technical Appendix provides information about the characteristics of leaders and teachers included in the analysis for this research brief.

### *Jewish day school leaders' participation in CPD was examined as a predictor of teachers' classroom practice.*

The trends summarized in the previous section serve as a context for the current study, which sought to promote our understanding of the value of CPD participation. Given the time constraints of school leaders and the cost of quality CPD, there is a need for research data on the extent to which participation in CPD related to Jewish learning should be encouraged by school boards and Jewish education funders. In this study, we examined the relationship between CPD participation and teachers' practice in the classroom—in both general education and Jewish education classrooms.

We examined two indicators of CPD participation as predictors of teachers' classroom practice:

- (1) The number of topics (from the list in Exhibit 1) learned by school leaders as part of CPD during the last 5 years. The leaders included in this study could be placed on a continuum of the number of topics learned through CPD. The range of participation in the sample varied from zero to seven topics. On average, leaders attended two topics.
- (2) Receiving ongoing CPD from Yeshiva University's School Partnership Institute (YUSP). Our sample included 14 leaders who received CPD through YUSP to 22 leaders who did not

receive YUSP CPD as part of the program YU Lead (currently called You Lead). Some of these leaders received individualized coaching from executive coaches in addition to group sessions. Also, some of the leaders combined their own professional development with coaching for members of their staff. This CPD variable was selected for sample size reasons. Other respondents received CPD through other programs, such as the AVI CHAI Foundation funded one-week summer institute provided by the Principals' Center at Harvard University and the Jewish Theological Seminary's Day School Leadership Training Institute. However, in each case, too few leaders (fewer than five individuals) participated and were not included in the statistical analysis.

***The statistical analysis took into account additional factors that may influence teachers' practice.***

In addition to CPD, the statistical analysis included the following factors: leaders' and teachers' professional experience, overall guidance provided by leaders to teachers on both general pedagogical practices and practices specific to promoting Jewish learning,<sup>ii</sup> as well as whether teachers felt they needed guidance from their leaders. Details on these variables are provided in the Technical Appendix.

Teachers' practice in the classroom—the predicted variable in this study—was defined as integrating Jewish knowledge and values into discussions and learning in the classroom. Specifically, teachers were asked to rate the extent to which they teach Jewish values, make connections between general and Judaic studies, embed Jewish or Hebrew terminology into lessons and conversations, discuss current events affecting the Jewish community or Jewish world, talk to students about their questions related to Jewish identity, and encourage students to participate in the broader local Jewish community. Because nearly all leaders in the sample oversaw both general studies and Judaic studies, we surveyed both general education and Judaic studies teachers.<sup>iii</sup>

## Findings

***Finding 1: School leaders' participation in professional development may affect teachers' practice in the classroom.***

The statistical analysis was first conducted with all 330 full-time teachers in our sample and their 36 school leaders. Two leader variables—participation in CPD and participation in the YUSP leader training and support program—were significantly associated with a higher level of teacher classroom practices. In addition, two teacher variables—number of years of teaching experience (in current and other schools) and general guidance from the school principal on pedagogical practices—were significantly associated with higher levels of the classroom practices examined. Table 5 in the Technical Appendix summarizes the results of the statistical analysis.

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<sup>ii</sup> Exploratory analyses showed that leaders' participation in professional development is not associated with the extent of guidance (general or specific to Jewish learning) to teachers.

<sup>iii</sup> The teachers who participated in the study were nearly equally divided, with 54% teaching general studies.

We repeated the same statistical analysis with a segment of the teachers in our sample defined as full-time Judaic studies teachers (142 teachers). None of the leader variables predicted teachers' classroom practice. Two teacher variables—years of teaching experience and receiving guidance from the school leader for designing and conducting educational activities to promote Jewish learning and engagement—significantly predicted teachers' classroom practice. Table 6 in the Technical Appendix summarizes the results of the statistical analysis.

The same statistical analysis with 178 full-time general studies teachers showed trends different from Judaic studies teachers but similar to the whole sample. The leader variable, participation in CPD, was significantly associated with a higher level of teacher classroom practices. The more topics leaders learned about, the more general education teachers do to promote students' interest in Jewish learning and participation. In addition, two teacher variables—number of years of teaching experience (in the current and other schools) and general guidance from the school principal on pedagogical practices—were significantly associated with higher levels of the classroom practices examined. Table 7 in the Technical Appendix summarizes the results of the statistical analysis.

Principal CPD and principal guidance are independent factors that influence teacher practice. We did not find a statistically significant correlation between CPD participation and extent of leaders' guidance to teachers. Exhibit 2 shows the distribution of teachers' ratings of the extent of guidance received on a 7-point scale. Higher scores represent more guidance to teachers. The median scores, represented by the horizontal lines within each colored box show that 50% of the teachers rated their' leaders' support as very high, and additional 25% of the teachers rated their leaders' support as moderately high.

Leaders' CPD may be associated with a school culture of professional learning. In interviews, school leaders shared that CPD enabled them to provide more substantive guidance to teachers (e.g., provide concrete tools, recommend professional literature, and model instructional practice), contribute to the professional learning culture of the school (e.g., lead professional learning communities), and model commitment to lifelong learning. The more school leaders share their learning with staff, the more teachers are able to integrate best practices into their teaching.

***Finding 2: Most teachers reported moderate to high level of leaders' guidance on instructional practices. Yet, about one-fourth of the teachers in day schools do not receive guidance on pedagogical practices from their supervising school leader.***

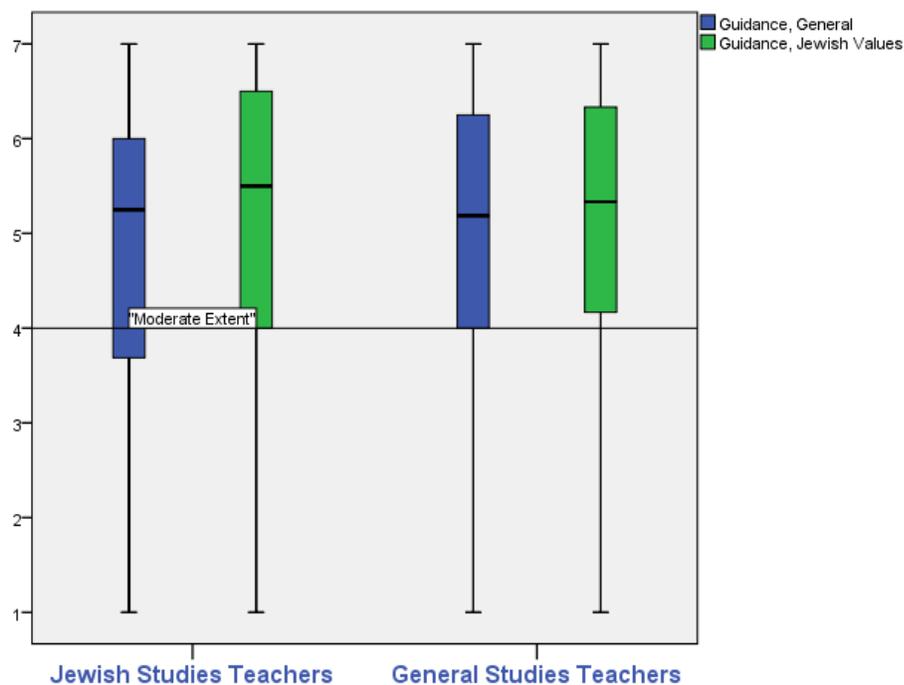
Teachers' reports are depicted in the "box plot" graph in Exhibit 2, below. The vertical axis represents the extent of guidance on a 7-point scale. The blue and green boxes represent the middle half of the distribution of guidance ratings. Within each box, the vertical line represents the median teacher rating for school leader guidance. Using this graphing technique, it is easy to see that most ratings are above the middle line of "moderate extent." At least 75 percent of the general studies teachers positively rated the extent of their leaders' guidance on general instructional practices as well as instructional practices specific to promoting Jewish values.

However, only about two-thirds of the Jewish studies teachers reported that their leaders provided guidance on general instructional practices. The teachers who reported on lack of guidance

represented both novice and veteran teachers. However, they came from a subset of schools in our sample – 25 out of the 36 schools included in this analysis.

All of the Judaic studies and general studies teachers, who rated their leaders' guidance on instructional practices to promote Jewish values as low, regarded the promotion of students' Jewish values and/or engagement in Jewish life as part of their job and felt they needed support (e.g., mentoring, resources, and advice) to accomplish these educational goals.

### Exhibit 1. Teachers' Ratings of Leaders' Guidance on Instructional Practices



### Finding 3: Making time for professional development is the primary obstacle holding leaders' back from growing their knowledge and skills.

Nearly all the leaders we interviewed reported that a lack of time was the main reason they did not attend professional development. Although leaders value lifelong learning and are avid readers of educational research literature, they felt that they could pursue professional development opportunities only when it would not compromise their other duties. As explained by a head of a school,

Providing me with professional development does not sound like a great thing because I don't have time. If there was a way to figure out how to get some things off my plate and carve out some time to do some professional development—that would be a good approach. I have talked to a lot of schools, a lot of principals and they are feeling the same way.

Because of time conflicts combined with a lack of explicit professional development requirements, some school leaders decline professional development offers—a practice that our survey data shows

is associated with lower job satisfaction related to professional growth. For example, the head of a school reported:

I'm working 14-hour and sometimes 15-hour days, and there is no one around me saying you need to go do this or you need to do that. And so, I tend to leave myself in the dust while I'm taking care of everyone else's professional development needs.

Some leaders participate in professional development activities except for ones delivered in the form of workshops or seminars. A common belief held by the school leaders interviewed is that one-time workshops are not sufficient to produce an impact on their work or their schools. Leaders expressed a need for continuity and connection to everyday responsibilities. At the same time, leaders reported enjoying conferences and professional development that expand their professional networking. If time allows, they see benefits in meeting other principals who are thinking in similar ways about education and are looking to collaborate on creating programs and educational materials.

A consensus among the leaders in our sample showed that the preferred type of professional development was mentoring—both because its individualized nature tailored professional learning to the particular issues that leaders dealt with and because of the flexible schedule. A head of school recalled as follows:

A few years back we had someone working with schools, and he and I would meet once in a while. It was low time commitment—45-minute meeting once every 6 weeks. It was very helpful to have someone who was really there to focus on my questions, and my thoughts, my issues. Confidentially, I could ask questions like “I don't know what to do about this? Or what do you think about this? Or have you ever had any experience with an issue like this?”

Another school leader shared as follows:

In my first year, I was desperate for regular coaching. So, I found myself a coach—someone who has been in Jewish education for 30 years. He, himself, was a classroom teacher for 10 years, and then he was a principal for 20 years. I pay him, actually, my own money, with the personal expense that I have invested in myself, and ever since we have had a weekly phone call every week. I never miss it. It has been invaluable to me because it helps me keep my head above the daily grit and grind that can suck you in and distract you. He helps me stay focused on the bigger picture and see things through a nonbiased lens. I think that if one day, when I do get a chance to impact the Jewish educational world on a broader level, one of the first things that I would try to do is to make it mandatory that all schools provide all administrators with outside coaching.

***Finding 3: Programs designed for middle management leaders are lacking.***

Statistical analysis did not find differences between senior management and middle management leaders in terms of CPD participation. However, interview data suggested a gap in CPD opportunities. Most middle management leaders (e.g., division heads) felt they were trusted to shape curriculum and instruction as they saw fit. These leaders sought more professional development opportunities

to be able to carry out these job responsibilities. However, they encountered a lack of CPD that met their professional learning needs. They felt that existing leadership programs for Jewish day school leaders are primarily geared toward senior management.

Many of the division heads interviewed have recently been in teaching positions, and some of them still teach part time. The diverse work that they need to undertake, which includes both teaching and supervising teachers, and their position in the school hierarchy require that CPD address some of the challenges unique to middle management, such as how to lead and work with school leadership teams, how to create a balance between performing teaching tasks and managerial tasks, and how to introduce innovation within the boundaries set by the head of school.

## Discussion

### *The complex task of school leadership requires continued professional learning.*

School leaders must be able to provide strong instructional leadership for continuous improvement of teaching and learning.<sup>15</sup> They need to be equipped with the knowledge necessary to mediate “between teachers and external ideas” as they navigate the expectations of the school board, parents, and the community (p. 123).<sup>16</sup> They need to make informed decisions and resolve conflicts and dilemmas surrounding curriculum and instruction while ensuring that the academic, social, and emotional needs of all students are met. Although educational leaders are not expected to be experts on all educational topics, they need to be able to provide differentiated feedback to staff members and direct staff to additional support as needed.<sup>17</sup>

Experts have argued that school leaders will be able to provide leadership for improving teaching and learning only if they themselves receive this relevant training.<sup>18</sup> Previous research has shown that insufficient CPD participation is associated with less feedback and guidance to staff, regardless of the strength of leaders’ background, such as preparation programs and professional experience.<sup>19</sup> The results presented in this research brief add empirical support to this claim. School leaders’ CPD on topics related to Jewish learning was significantly and positively associated with general education teachers’ self-reported classroom practices that aim to promote Jewish engagement and growth. This finding suggests that despite the low interest of many school leaders in CPD related to Judaic leadership, there may be benefits to mandating some forms of continued learning and allocating the resources required for CPD.

### *There are specific actions that schools boards, school associations, and professional development program providers can take to motivate leaders’ participation in CPD.*

Attending professional development is not easy or comfortable. Data suggest that school leaders value CPD but will invest in it only if they believe that it will directly benefit their professional growth schools. Based on the data collected from this study and the literature, we list three actions that may promote participation of leaders in CPD.

#### **1. Helping Leaders Develop Professional Development Plans**

There are no hard and fast rules for the number of professional development hours or courses that school leaders should complete annually. However, there is a consensus among experts that school

leaders should have professional development plans which may be updated annually based on specific individual and school needs and leaders' annual performance evaluation.<sup>20</sup> It is important that leaders' performance evaluation and CPD will be part of the same comprehensive system of support. Through such alignment, supervisors can ensure that leaders receive both constructive feedback and suggestions for ways they can improve their performance.<sup>21</sup>

Experts have recommended that CPD plans should consider how the CPD content links to prior CPD that the leader has attended, the results of the performance evaluation, and identified needs for school improvement.<sup>22</sup> Given the limited time that school leaders have for CPD and the resources needed for designing high-quality training programs, it would more cost-effective to ensure that leaders receive CPD that is aligned with their performance evaluation, school development plans, and research evidence on effective training. To make sure that school leaders' are well equipped to provide adequate guidance to staff, their CPD should be monitored for content, quality, and rigor.

Jewish day school leaders do not perceive as helpful all types of CPD. The factors that make CPD helpful are similar in public and Jewish day schools. CPD that impacts practice is continuous and includes follow-up discussions and opportunities to assess progress.<sup>23</sup> While CPD that is theory-driven and research-based is preferable, it has to include practical information and tools that can universally improve leadership actions across school types.<sup>24</sup>

## ***2. Providing professional tools for immediate application***

Researchers have suggested that effective CPD should provide concrete tools and practical information for the immediate application of strategies in the school context. Some experiences that principals may regard as meaningful are those that help them think differently about issues or be better able to reflect on the quality of their work.<sup>25</sup> Ongoing coaching and mentoring have been shown as key practices for strengthening leadership skills.<sup>26</sup> Learning as part of cohort groups, reviewing case studies, and conducting field-based and applied research are among the most successful strategies identified in leadership programs.<sup>27</sup> Coaching and mentoring offer immediate support in the context of job responsibilities. Our study found that in many Jewish day schools, senior school leaders (e.g., heads of schools) provide CPD in the form of coaching and mentoring to middle management leaders (e.g., division heads). Individualized CPD enables emerging leaders to monitor progress toward achieving professional learning goals. Senior leaders can help emerging leaders (1) clarify their roles as leaders, (2) recognize their personal strengths and weaknesses, (3) consider different ideas for action, (4) stay motivated to pursue a career in Jewish day school leadership, and (5) gradually increase their job responsibilities. Researchers suggest that individualized CPD within schools can improve the job performance outcomes of the CPD recipients, their direct supervisors, and teachers.<sup>28</sup>

As noted by the leaders interviewed for this study, it is not sufficient to introduce leaders to research and theory or even to standard practices used in other Jewish day schools. CPD should include clear recommendations for practice as well as support for adapting the results of educational research evidence on best practices into implementation plans aligned with the context of the school.

### ***3. Designing CPD programs for middle management***

The results reported in this research brief also make a case for increasing CPD support to middle management leaders (e.g., division heads). Research has suggested that CPD can significantly enhance both their job performance and job satisfaction.<sup>29</sup> Some educational research conducted in public schools can be used to inform discussions about middle management in Jewish day schools. One strand of research focuses on school principals as middle managers whose work is shaped by policy directions made at the district level.<sup>30</sup> These studies, situated in public schools, emphasize essential skills such as negotiating change strategies with upper management. Educational leaders sit atop a school hierarchy, yet their authority is limited by certain boundaries, such as their job responsibilities as defined and annually revisited by the head of school and school board. Our qualitative data suggest a bidirectional connection between CPD and a leader's autonomy. Leaders who have gained the work experience and relevant knowledge are trusted by their heads of schools and school board with greater discretion to implement policies and initiatives in ways that meet student needs.

#### ***Additional research is required to identify the scope, sequence, intensity, and duration characteristics of effective CPD programs.***

The converging empirical evidence lends support to the recommendation that school boards should allocate funding for annual professional development to school leaders, aligned with leaders' performance evaluation results and their goals for school improvement. Funders in Jewish education should support sustainable, research-based professional learning programs as well as mentoring models that provide individualized professional development to school leaders.

The U.S. Department of Education has awarded more than 60 grants to support the identification of effective programs for school leaders and understand the intensity and duration of CPD associated with school improvement and career pathways of leaders at different stages of their careers.<sup>31</sup> CPD providers in Jewish education may benefit from the results of this initiative, once they become publicly available. Additional work is needed to identify the features of effective CPD that are unique to the context of Jewish day schools.

#### ***Additional data can shed light on the guidance and support teachers need.***

An important part of educational leadership is communicating with teachers about instruction and assessment. Our findings show that leaders' guidance is directly associated with teachers' instructional efforts. About one-fourth of the teachers in our sample did not receive the guidance they needed. A significant limitation of this study was lack of site visits and direct observations of classroom instruction. Future research that includes direct observations can help identify strengths that currently exist in Jewish day school classrooms as well as areas for support. Needs for coaching and guidance may be evaluated for multiple domains such as teacher-student interaction, pacing and use of time, differentiation of activities by student performance level, organization of the classroom physical environment, behavior management in the classroom, student engagement, and methods for assessing students' mastery of objectives. Examination of leaders' preparedness to provide support for each of these areas can inform CPD for educational leaders.

# Technical Appendix

## Study Sample

As part of a larger study on Jewish educational leaders, AIR researchers collected data on school leaders' participation in professional development related to Judaic studies during the last 5 years, school leaders' attitudes toward professional development, and teachers' classroom practices related to infusing Jewish values into the curriculum. Of a national sample of more than 300 school leaders who took our survey for educational leaders, 50 agreed to participate in further data collection activities, which included teacher surveys and interviews with leaders. Of these leaders, complete data were available from the leader survey and the teacher survey for 36 leaders (72% response rate).

The vast majority of the leaders in this study oversaw both general and Judaic studies (89%). The grade levels supervised by the school leaders represented the entire K–12 range (40%, 25%, and 35% of the leaders in elementary, middle, and high schools, respectively). The schools were located in multiple geographical locations. Forty percent were in the Northeast, and the remainder of the schools were equally divided between the Southeast, the Midwest, and the West. About one-half (47%) of the leaders represented in this study were female. The largest denomination groups represented were Community Schools (35%) and Modern Orthodox (29%). The remainder of the schools were 18% Centrist Orthodox, 14% Schechter, and 4% Reform. The schools in which the school leaders worked varied in size with enrollments from 250 to 1,100 students, with a mean of 386 students.

Within the 36 schools, the teacher response rate to the teacher survey varied from 30% to 90%. In total, 597 teachers took the survey. Based on information about teachers' responsibilities, preliminary descriptive analysis, and study hypotheses, we excluded part-time teachers from the analysis reported in this research brief. The statistical analyses reported in this research brief included 330 full-time teachers and 36 school leaders. Preliminary analyses found no statistically significant relationships between the predictors used and classroom instructional practices of part-time teachers. Part-time teachers tended to teach subjects that are not part of the core curriculum. In addition, they typically worked in a second school, where they were likely to receive coaching and guidance from another school leader. For these reasons, we excluded part-time teachers for the current analyses.

Of the full-time teachers, 54% taught general studies, 43% taught Judaic studies, and 3% did not report the subjects taught. Two-thirds (67%) of the respondents identified themselves as females, 22% identified as males, and 11% declined to state their gender. The number of years of teaching experience overall (in public and private schools together) ranged from 1 to 40 years, with a mean of 15 years (standard deviation = 11). The number of years of employment in the current school had the same range with a mean of 9 years (standard deviation = 8). The study team administered the Jewish educational leadership survey in spring 2015 and the teacher survey in spring 2016. Interviews with school leaders were conducted in spring 2016.

## Data Sources

*Interviews.* Researchers conducted individual phone interviews with the school leaders. The interviews were recorded and transcribed. For this analysis, responses to the following interview questions were analyzed: (1) In the last one or two school years, did most teachers, one or more teachers, or no teachers improve the way they teach Jewish values? (2) Please provide an example. (3) What enabled this improvement? Information on years of professional experience and role at the school were collected through interviews.

*Teacher Report.* The study team e-mailed participating teachers a link to an online survey. The teacher survey provided the information used to examine the following variables:

- **Professional Experience (Years).** Responses to the question: “Including the current school year, how many years in total have you been employed as a teacher in public or private schools?”
- **Leader Guidance (General).** A composite score created using an unweighted average of the eight items in Table 1.
- **Leader Guidance (Jewish Learning).** A composite score created using an unweighted average of the eight items in Table 2.
- **Teacher Classroom Practices.** A composite score created using an unweighted average of the eight items in Table 3.
- **Need for Support.** A binary variable coded “0” or “1.” Teachers with a score of 1 responded “yes” to the question “Do you see the promotion of students’ Jewish values and/or engagement in Jewish life as part of your job as an educator?” as well as the question: “In general, do you feel that you need support (e.g., mentoring, resources, advice) from [Leader’s Name] relative to promoting students’ Jewish values and engagement in Jewish life?”

**Table 1. Leader Guidance (General) Scale**

To what extent do you feel that your principal, [Name], provides the support that enables you to do the following in your teaching at [School Name] this year?		
Survey Item	Judaic studies Teachers Mean (SD)	General Studies Teachers Mean (SD)
Respond to difficult questions from your students.	4.97 (1.82)	5.05 (1.73)
Gauge student comprehension of what you have taught.	4.65 (1.86)	4.78 (1.68)
Craft good questions for your students.	4.55 (1.87)	4.73 (1.77)
Adjust your lessons to the proper level for individual students.	4.66 (1.92)	4.72 (1.83)
Use a variety of assessment strategies to measure student learning.	4.66 (1.87)	4.90 (1.70)
Provide an alternative explanation or example when students are confused	4.63 (1.91)	4.85 (1.75)
Implement alternative instructional techniques to address different learning styles of students	4.81 (1.86)	5.07 (1.87)
Provide appropriate challenges for very capable students.	4.72 (1.94)	4.86 (1.79)

Note. Each item was rated on a 7-point scale. There was a high internal consistency among the items as indicated by Cronbach's  $\alpha = 0.98$ . Cronbach's  $\alpha$  denotes the reliability of each scale, which indicates how well the items measure the same construct or type of behavior.<sup>32</sup> For none of the items in this table as well as the average score of all items, there were statistically significant differences between Judaic studies and general studies teachers. SD=standard deviation.

**Table 2. Leader Guidance (Jewish Learning) Scale**

To what extent does your principal, [Name], provide guidance, resources, or other support for the following educational activities?		
Survey Item	Judaic studies Teachers Mean (SD)	General Studies Teachers Mean (SD)
Model core values that are central to the mission of the school.	5.49 (1.70)	5.62 (1.34)
Design student activities that offer valuable opportunities for students to practice core values.	5.23 (1.71)	5.36 (1.46)
Facilitate classroom conversations about Israel	4.47 (1.98)	4.46 (1.80)
Assess students' growth relative to personal conduct (Derech Eretz).	5.04 (1.83)	5.16 (1.60)
Assess students' growth relative to personal and social responsibility (Acharayut).	4.89 (1.86)	5.24 (1.56)
Encourage students to put their Jewish commitment into action when they are outside school.	5.18 (1.74)	5.29 (1.57)

Note. Each item was rated on a 7-point scale. There was a high internal consistency among the items as indicated by Cronbach's  $\alpha = 0.95$ . Cronbach's  $\alpha$  denotes the reliability of each scale, which indicates how well the items measure the same construct or type of behavior.<sup>29</sup> For one of the items in this table, *Assess students' growth relative to personal and social responsibility*, there was a statistically significant difference between Judaic studies and general studies teachers ( $p < 0.09$ ), favoring general studies teachers. Across all items, the composite scores for general education and Judaic studies teachers were not statistically significant.

**Table 3. Teachers' Classroom Practices Scale**

If an observer were to watch you teaching at [School Name], how often would he/she see you doing each of the following?		
Survey Item	Judaic studies Teachers Mean (SD)	General Studies Teachers Mean (SD)
Teach Jewish values.	4.52 (0.73)	3.41 (0.93)
Make connections between general and Jewish studies.	3.95 (0.90)	3.49 (0.91)
Embed Jewish or Hebrew terminology into lessons and conversations.	4.55 (0.80)	3.02 (1.05)
Discuss current events affecting the Jewish community or Jewish world.	3.75 (1.00)	3.00 (0.94)
Talk to students about their questions related to Jewish identity.	4.19 (0.89)	3.02 (0.99)
Encourage students to participate in the broader local Jewish community.	3.65 (1.02)	3.19 (1.05)

*Note.* Each item was rated on a 5-point scale. There was a high internal consistency among the items as indicated by Cronbach's  $\alpha = 0.89$ . Cronbach's  $\alpha$  denotes the reliability of each scale, which indicates how well the items measure the same construct or type of behavior.<sup>29</sup> For all the items in this table, there were statistically significant differences between Judaic studies and general studies teachers ( $p < 0.05$ ) favoring Judaic studies teachers.

Tables 4 and 5 provide the descriptive statistics and statistical analysis outcomes respectively for the multilevel regression analysis.

**Table 4. Descriptive Statistics**

Variable	Minimum	Maximum	Mean	Standard Deviation
<b>Dependent Variable</b>				
Teacher Classroom Practice	1	5	3.65	0.89
<b>School/Leader-Level Independent Variables</b>				
Professional Experience (Years)	1	32	6.39	6.70
Leader Professional Development	0	7	2.16	2.18
YUSP Support	0	1	14 (count) <sup>a</sup>	Not applicable
<b>Teacher-Level Independent Variables</b>				
Professional Experience (Years)	1	40	14.91	10.65
Guidance, General	1	7	4.76	1.69
Guidance, Judaic studies	1	7	5.12	1.52
Need Support	0	1	171 (count) <sup>a</sup>	Not applicable

<sup>a</sup>For binary variables, counts instead of means are provided.

**Table 5. Results for a Multilevel Model Predicting Teacher Classroom Practices (All Teachers)**

Variable	Regression Coefficient	Standard Error	t Ratio
<b>School/Leader-Level Independent Variables</b>			
Professional Experience (Years)	0.01	0.01	0.23
Leader Professional Development	0.06	0.03	2.17**
YUSP Support	0.23	0.12	1.91*
<b>Teacher-Level Independent Variables</b>			
Professional Experience (Years)	.02	.01	2.67***
Guidance, General	.12	.05	2.36**
Guidance, Jewish Values	.01	.06	0.13
Need Support	.02	.01	0.16

*Note.* The dependent variable is teacher classroom practice. YUSP = Yeshiva University School Partnership. The analysis was based on data from 330 full-time teachers and 36 educational leaders.  
Level of statistical significance: \* $p < .10$ ; \*\* $p < .05$ ; \*\*\* $p < .01$ .  
*Source.* AIR principal survey; AIR teacher survey.

**Table 6. Results for a Multilevel Model Predicting Teacher Classroom Practices (Judaic studies Teachers)**

Variable	Regression Coefficient	Standard Error	t Ratio
<b>School/Leader-Level Independent Variables</b>			
Professional Experience (Years)	0.00	0.00	0.09
Leader Professional Development	0.04	0.01	1.3
YUSP Support	-0.05	0.11	-0.47
<b>Teacher-Level Independent Variables</b>			
Professional Experience (Years)	.02	.01	2.23**
Guidance, General	.04	.06	.56
Guidance, Jewish Values	.16	.07	2.32**
Need Support	.11	.12	.91

*Note.* The dependent variable is teacher classroom practice. YUSP = Yeshiva University School Partnership. The analysis was based on data from 330 full-time teachers and 36 educational leaders.  
Level of statistical significance: \* $p < .10$ ; \*\* $p < .05$ .  
*Source.* AIR principal survey; AIR teacher survey.

**Table 7. Results for a Multilevel Model Predicting Teacher Classroom Practices (General Studies Teachers)**

Variable	Regression Coefficient	Standard Error	t Ratio
<b>School/Leader-Level Independent Variables</b>			
Professional Experience (Years)	0.01	0.01	0.61
Leader Professional Development	0.07	0.03	2.14**
YUSP Support	.02	0.02	1.1
<b>Teacher-Level Independent Variables</b>			
Professional Experience (Years)	.01	.01	1.65*
Guidance, General	.12	.07	1.87*
Guidance, Jewish Values	-.03	.08	-.40
Need Support	-.07	.14	-.54
<p><i>Note.</i> The dependent variable is teacher classroom practice. YUSP = Yeshiva University School Partnership. The analysis was based on data from 330 full-time teachers and 36 educational leaders.</p> <p>Level of statistical significance: *<math>p &lt; .10</math>; **<math>p &lt; .05</math>.</p> <p><i>Source.</i> AIR principal survey; AIR teacher survey.</p>			

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