



## Applied behavior analysis services in public schools in Israel: examining functional behavior assessment processes

Shiri Ayvazo

To cite this article: Shiri Ayvazo (2015): Applied behavior analysis services in public schools in Israel: examining functional behavior assessment processes, European Journal of Behavior Analysis, DOI: [10.1080/15021149.2015.1108540](https://doi.org/10.1080/15021149.2015.1108540)

To link to this article: <http://dx.doi.org/10.1080/15021149.2015.1108540>



Published online: 04 Nov 2015.



Submit your article to this journal [↗](#)



Article views: 2



View related articles [↗](#)



View Crossmark data [↗](#)

## Applied behavior analysis services in public schools in Israel: examining functional behavior assessment processes

Shiri Ayvazo

Applied Behavior Analysis Certification Program, Special Education and Compound Disabilities Programs, David Yellin Academic College, Jerusalem, Israel

### ABSTRACT

Applied behavior analysis (ABA) is a fairly young and growing discipline in Israel. Similar to countries in Europe and in the United States, ABA is yet to be formally recognized as a profession in Israel. Infusion of behavior analysis (BA) specialists into the public education system has been occurring gradually over the past two decades, yet there is no literature that documents these processes and the quality of ABA services provided in Israeli schools. This article brings forward one leading example of municipal efforts in a city in central Israel to integrate BA specialists and ABA services into school settings, given the unregulated status of the discipline. Three models of integration are presented. As part of a growing service in this municipal city, this article focuses on examining the FBA processes conducted by the BA specialists. Preliminary data on these processes are presented. Challenges of FBA in Israeli public schools are reviewed and discussed. This article concludes with thoughts and lessons in global context that may be relevant to other countries sharing comparable ABA status and experiencing similar challenges assimilating BA specialists into public organizations.

### ARTICLE HISTORY

Received 17 December 2014  
 Accepted 11 August 2015

### KEYWORDS

Functional behavior assessment; applied behavior analysis services; public schools; Israel; MATIA

Applied behavior analysis (ABA) has a relatively short history in Israel. For example, the Israeli Association for Applied Behavior Analysis was established in 2003, and a few years later the Israeli Association for Certified Behavior Analysts was founded. Similar to efforts made by European organizations in the field of behavior analysis (BA), the two Israeli professional organizations aim to promote the specialized status of ABA and its establishment as a known and approved science by the Israeli government and public.

Formal training in ABA in Israel has begun in the early 90s and since then has gradually developed. To date, there are two leading certification training programs in Israel that are in alignment with the Behavior Analysis Certification Board (BACB) requirements which produce Board Certified Assistant Behavior Analyst (BCaBA)- and Board Certified Behavior Analysis (BCBA)-eligible students on a yearly basis. Both programs are academically housed within education departments of higher education institutions (i.e., University and College). Two decades of preparation of behavior

analysts resulted in more than 1,000 specialists who provide ABA services across the country. As of October 2015, there are 56 BCaBA, 38 BCBA, and 6 BCBA-D certificants in Israel. All other graduates are non-certified, yet active behavior analysts. Similar to countries in Europe (Hughes & Shook, 2007) and in the United States (Dorsey, Weinberg, Zane, & Guidi, 2009), there is no formal recognition for ABA as a profession in the state of Israel. For this article, the term *BA specialist* will be used to refer to individuals who were trained and successfully graduated from an eligible ABA program, with or without the BACB certification. The growth of BA specialists in Israel has been parallel to increased familiarity with and demand for ABA as a service, particularly for individuals with special needs. BA specialists in Israel provide services in homes, intervention centers, hostels, day cares, and schools.

This article confers the integration of BA specialists into the public education system in Israel in general, and particularly their functional behavior assessment (FBA) performance within this system. This article includes preliminary performance data and discusses performance challenges as experienced by the BA specialists. Finally, this article offers thoughts and lessons in global context that may be relevant to any country that may be in similar evolutionary situation, particularly as it relates to ABA applications within the formal public education system.

### Special education law in Israel

The state of Israel is small (22,072 km<sup>2</sup>) and includes over 8 million people. Public education services are national and managed by the state (i.e., Ministry of Education). The state is divided into six districts (Jerusalem, Northern, Haifa, Central, Tel Aviv, and Southern), with superintendents running each of the districts. Prior to 1988, Israel, which has no formal constitution, had insufficient laws and regulations to ensure complete educational access for its citizens with disabilities (Meadan & Gumpel, 2002). Legal challenges and legislative advocacy movements led to the proposal and subsequent establishment of the Special Education Law (SEL) (Gumpel, 1996).

The SEL was legislated in 1988 to ensure the rights of exceptional children. Exceptional children are persons between age 3 and 21 years who have lacking and restrictive adaptive behavior due to physical, mental, intellectual, or behavioral disability. These children are entitled to appropriate education services that will advance and develop their skills and abilities, remedy their deficiencies, and facilitate their integration into the Israeli society and employment cycles. The law includes teaching, instruction, and other professional ancillary treatment services (e.g., speech therapy, occupational therapy) provided according to the essentials of the student with special needs. These needs are formalized in an Individualized Education Plan prepared by the institutional interdisciplinary team.

SEL has been further revised in 1996 and 2002. Revisions enhanced the emphasis on inclusion of the student with special needs within general education settings to limit the number of students placed in segregated settings. One of the mechanisms to do so was by the formation of decentralized resource centers in nearly every city in Israel. Centers operate as Local Support and Resource Centers (LSRCs) and are called "MATIA" (Meadan & Gumpel, 2002). The LSRCs operate to facilitate the provision of special education services to those students with special needs placed in general education

settings. LSRCs primarily serve students with mild-moderate severity categories. Organizationally, special education teachers and therapists are associated with their LSRCs, and not with a specific school. Thus, educational and paraprofessional services are provided to inclusion students within a consultative-collaborative framework (Meadan & Gumpel, 2002). To date, there are 67 LSRCs across the country (Ministry of Education, Department of Special Education, Israel).

### **ABA services in the public education system**

Infusion of BA specialists into the public education system in Israel has initially began in 1991 in a special education school. This move was followed by recruitment of two BA specialists into two LSRCs in the central district in 1995 and 2000. Hiring of BA specialists has been growing steadily since 2000 and has been made mainly through LSRCs, who are responsible for providing paraprofessionals to support students in different school settings. Only few, if any, are hired directly by special education schools, and until recently, none were hired by general education school principals for services of typically developing students. Challenged by the lack of formal legal status, attainment of BA specialists in the public system has been assumed under a teaching position, paraprofessionals, or other approved profession for hiring by the Ministry of Education.

There are few intertwined explanatory trends for the ongoing growth of BA specialist hiring within the public education system: (a) Israeli population is undergoing major changes including increased students' heterogeneity and increased levels of disciplinary problems, special needs, and challenging behaviors (Central Bureau of Statistics, Israel); (b) growing demand of teachers to receive instrumental support in accommodating students' needs and addressing challenging behaviors in the classroom; (c) rise in BA specialists providing assistance in classrooms which leads to increased familiarity with ABA services, resulting in augmented demand for behavioral interventions; and (d) in-service teachers seeking professional development enroll in ABA certification programs and upon graduation decide to pursue this route as professional retraining and return to the LSRC as BA specialists. Approximately 46% of LSRCs (i.e.,  $n = 31$ ) employ BA specialists in some capacity. Some LSRCs occupy more than one BA specialist, yet there are no formal data to support the breadth of this emerging trend, presumably due to lack of absolute regulation of ABA as a recognized profession by governmental offices.

Few LSRCs have made significant ABA inroads within the public education community they serve (especially in the Central and Tel Aviv districts). The case of LSRC (i.e., MATIA) Holon-Azur is brought forward as exemplar for rapid evolution of competent professional ABA services. Holon is a city (Azur is its suburb) located in the Tel-Aviv district, in central Israel. It includes approximately 196,000 residents. MATIA Holon-Azur (MHZ) serves 27 elementary schools and 12 secondary schools. ABA services have been provided by MHZ for four years now, beginning with 5 weekly hours assigned to one BA specialist during the first year. Over the next three years, BA services have grown exponentially from 5 weekly hours to over 200, and from one BA specialist, to an entire clinical unit composed of 15 BA specialists, advised by a Board Certified Behavior Analyst at the doctorate level (BCBA-D, author). Successful applications of behavioral services enabled the rapid growth both in hours and personnel

employed, as well as in the working models established across the city to address the behavioral challenges the local education system encounters. The next section details three working models developed within MHZ over the past three years.

The conception of MHZ, similar to the conception of the Special Education services across the country, is that interventions should be provided early and possibly within the general education environment. This is to limit the number of students referred, often immaturity, to special education. Albeit MHZ is legally trusted on the delivery of special education services to students with special needs and by definition cannot provide services to students in general education without formal special needs. Additionally, in light of the absence of formal professional recognition, LSRCs' ability to hire BA specialists is possible only if the individual holds a teaching certificate, preferably in special education, from an acknowledged higher education institution in Israel. It is also important to note that it is not an ordinary practice that LSRCs recruit BA specialists. It requires the MHZ director and the city's special education superintendent to appreciate ABA and believe it is a valid and desirable professional treatment. In other words, if LSRCs are run by directors and supervised by superintendents that hold a bias against ABA, most likely ABA would not be welcomed to join the treatment therapies team in the LSRC.

### **Models of ABA services in MHZ**

Given the above credential regulations, hiring, and other limitations, MHZ has developed three working models that correspond with its mission and vision. These models, which are presented next, facilitate the integration of ABA services and BA specialists into the educational system. The first model is the special education ABA service. ABA services in this framework are alike any other treatments and therapies (e.g., art therapy) provided by MHZ, specifically to students with special needs in special education schools, special education classroom in general schools, or to individual students who are included within general education classrooms. This framework, with some variations, is the leading model of integration of BA specialists into the education system through LSRCs across the country. As mentioned earlier, these professionals not only have completed training in ABA but also have been trained as teachers, with some holding a teaching licensure and an active background as a teacher.

The other two models foster the integration of BA specialists within general education schools and kindergarten settings, providing services to students who are not formally diagnosed as having a disability and entitled to additional ancillary support. Referrals are based on severe and chronic behavior problems that situate students at risk for receiving a special education placement recommendation. The two models are an outcome of joint efforts of Holon municipal education administration, Holon elementary education superintendent, school principals who provide partial funding, and MHZ who provides the professional guidance to the BA specialists hired by the general education schools.

One model named SHOHAM (Hebrew acronym for optimal behavior improvement) provides a behavioral support package to typically developing preschool children (age 3–5 years) who exhibit severe challenging behaviors. The model targets few selected students during the academic year, who have previously received various intervention

programs to alleviate problem behaviors and promote adequate social and academic development with no success. The intensive behavioral support package includes approximately 5 weekly hours of a BA specialist, a full-time aid (approximately 30 weekly hours), and psychological support for the parents of the child. The BA specialist prescribes and delivers the intervention and trains the aid to extend the intervention across the days and weeks.

The success of SHOHAM and high consumer satisfaction among the education administration of the municipality and superintendents decision-makers paved the road to establishing ABA support to elementary grade students through a project called SHENHAV (Hebrew acronym for behavior management improvement in schools). SHENHAV is the third model established by MHZ and the first that has facilitated the hiring of BA specialists without previous teaching background and certifications in the public education system. According to this model, BA specialists are hired by the school principal and allotted 3 hours per week to each case referred to them. Principals are incentivized to hire BA specialist as they receive a matched funding from the municipality. For example, if the school designates 9 weekly hours to a BA specialist, the municipality funds 9 additional hours. In this case, the BA specialist's position would be 18 hours a week, and within this time he or she would have approximately six cases (i.e., individual students, small groups, or a classroom) assigned to their caseload.

### **FBA in MHZ**

MHZ represents a unique example of rapid growth and adoption of ABA services across the city. During this advanced development, special efforts were placed on scrutinizing FBA processes to pursue competent quality services. Executing, improving, documenting, and refining FBA processes within the public education system in LSRC MHZ have been governed by two premises. First, FBA is considered best practice for identifying and understanding correlational or casual relations between behaviors and environmental stimuli (Beavers, Iwata, & Lerman, 2013; Gable, Park, & Scott, 2014). As such, it has a primary role in the development of appropriate intervention plans (Gresham, Watson, & Skinner, 2001). Second, at the very least FBA must be performed preceding disciplinary actions with students who have special needs, and those who were referred for services due to challenging behaviors (Gresham et al., 2001). The next section reviews preliminary data on FBA processes as executed in MHZ, as the first set of data ever published on this practice in the state of Israel.

### **FBA processes**

Albeit FBA is not mandated in Israel, it is a most needed process in the Israeli school settings for various reasons: General education classes are large (30–38 students) and so is students' heterogeneity (socioeconomic status, religion, learning ability, special needs); school professionals such as psychologists, school counselors, and even the principal are increasingly asked to assist and intervene on problem behaviors that are on the rise; engagement in problem behaviors is often multiple; typically, schools are compound settings which produce effective reinforcing contingencies for problem behaviors (e.g., transfer to the counselor's warm, cozy, and exciting office following a

problem behavior); problem behaviors are under different reinforcement schedules; their stability varies over time and settings; same problem behaviors may be associated with different consequence contingencies; and treatment is often prescribed independently and arbitrarily from the behavioral function (Vollmer & Northup, 1996).

The MHZ BA unit director (BCBA-D) has developed a questionnaire to collect data on FBA processes performed by the BA specialists, in order to examine the FBA efficiency and scrutinize its application. Questionnaires were given to all MHZ BA specialists ( $n = 12$  excluding the unit director) at the end of the school year. Questions were partly developed in accordance to FBA data measures identified in a summative review of 90 public school FBAs (Mueller, Nkosi, & Hine, 2011). The questionnaire included four demographic questions (e.g., years of experience since graduation) and eight questions about the FBA process (e.g., which assessment procedure was implemented and the average and range of implementation time). The last question required an open narrative, asking the BA specialists to describe the challenges they had experienced during the FBA process. All BA specialists returned the questionnaires in full. Items filled incorrectly were returned to the specialists with explanation as to how or which data to provide.

Table 1 includes demographic information on the participating BA specialists (pseudonyms). The average year of experience since graduation of an ABA program was 3.3 years. All BA specialists are graduates of (BACB) pre-approved ABA programs. Seven (58%) of them hold certifications by the BACB. Four are BCaBA and three are BCBA. Only seven specialists reported they had received training in FA.

Table 2 details the type of diagnosis for the individual students who received ABA intervention. Of the 72 referral cases for ABA services, most students (K-8,  $n = 32$ ) were diagnosed with attention deficit hyperactivity disorder, and the next prevalent ( $n = 21$ ) were students who were demonstrating challenging behaviors yet were not medically or otherwise diagnosed (see Table 2). Some of the students referred had multiple diagnoses (e.g., attention deficit hyperactivity disorder and oppositional defiant behavior).

Analysis of types of assessment methods BA specialist conduct shows that the BA specialists begin their case assignment with indirect functional assessment accompanied with direct antecedent-behavior-consequence (ABC) observations. They then proceed to taking direct quantitative data on specific discrete behaviors that may be targets for intervention. They do not perform functional analysis involving manipulation of

**Table 1.** Demographics of the participating BA specialists.

BA specialist	Years of experience	Certification	Training in functional analysis
Dorothy	9	BCaBA	Yes
Veronica	8	BCBA	Yes
Lily	6	BCBA	Yes
Ronda	4	No	No
Abigail	2	BCaBA	No
Aaron	2	BCaBA	Yes
Olivia	2	No	No
Alexandra	2	No	Yes
Taylor	2	BCBA	No
Sheila	1	No	Yes
Yonit	1	BCaBA	Yes
Tammy	1	No	No

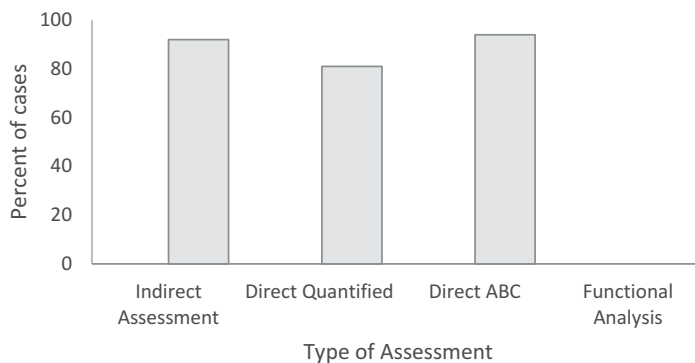
BCaBA = Board Certified Assistant Behavior Analyst; BCBA = Board Certified Behavior Analyst.

**Table 2.** Type of diagnosis for individual students receiving ABA services (some students had multiple diagnoses).

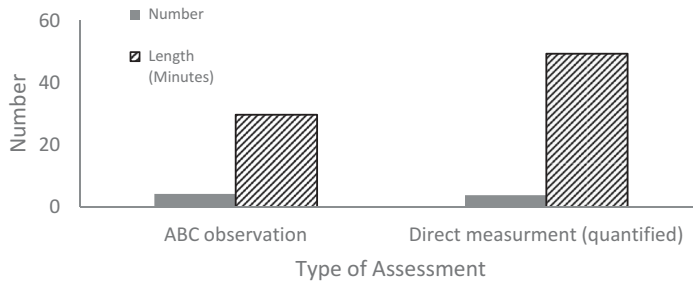
Diagnosis	Number of students
Attention deficit hyperactivity disorder	32
None	21
Pervasive developmental disability	11
Oppositional defiant disability	7
Mental retardation	6
Emotional disorder	4
Learning disorder	4
Cerebral palsy	4
Head injury	1
Anxiety disorder	1
Language disorder	1

environmental stimuli to identify conditions under which problem behaviors are more prevalent. Based on the data collected and presented in [Figure 1](#), indirect functional assessment was completed on 91.7% of the cases, direct ABC observation on 94.4%, and direct quantitative measures of behavior on 80.6% of the cases. Rarely does a case begin without FBA, while FA is a practice yet to be performed as prerequisite for intervention. Not performing experimental FA can be attributed to two interrelated reasons. One is related to training and competency level of BA specialists to perform experimental FA in the school setting. Only some of the BA specialists had received formal training in FA. That training was not oriented to school settings, and evidently, BA specialists were not able to complete the appropriate transfer of theoretical and practical knowledge to their work setting. Second, behavior challenges in school settings occur concomitantly, often as a function of intermittent reinforcement, and under joint stimulus control. These complex conditions present intricate challenges for completion of FA.

To optimize the process of gathering indirect data on the case, the director of the clinical ABA unit in MHZ has led an initiative to translate established, peer-reviewed indirect assessment instruments into the native language (i.e., Hebrew) so they can be used by the BA specialist team. Over 10 different indirect functional assessment instruments were translated and all BA specialists received training on how to use them properly. The data gathered from the questionnaires suggest that BA specialists mostly used the following instruments: Functional Analysis Screening Tool (Iwata, DeLeon, & Roscoe, 2013), Problem Behavior Questionnaire (Lewis, Scott, & Sugai,

**Figure 1.** Types of functional assessments performed.





**Figure 2.** Number of functional assessment observations and duration of observations.

1994), Functional Assessment Checklist for Teachers and Staff (March et al., 2000), Functional Assessment Interview (O'Neill et al., 1997), Motivation Assessment Scale (Durand & Crimmins, 1988), and Functional Assessment Interview Student (Kern, Dunlap, Clarke, & Childs, 1994).

Time to completion of FBA and beginning an informed, function-based intervention is a critical factor for the consumers, principal, and staff. Particularly in light of the nature of some cases that present high-intensity, high-risk challenging behaviors and require immediate intervention. Therefore, it was imperative to assess the duration of the FBA processes. These data, displayed in Figure 2, show that BA specialists perform 4 ABC observations on average (range 1–9), lasting 29 minutes on average (range 7–50 minutes). Next, they conduct 3.75 observations on average (range 0–7), directly measuring specific behaviors of interest. These observations last 49.2 minutes on average (range 7–330 minutes; on full school day observation, aid conducting the observation). In MHZ, ABA working model assigns 3 weekly hours for each student receiving ABA service as a starting point. Some students, pending severity of the case, receive more hours. These hours are provided across 2–3 days a week. Consequently, the operative meaning of collecting eight observations in addition to meetings with school staff for indirect assessment is that the duration of completion of the entire FBA process (from receiving the case, until launching the intervention) is 5.35 weeks on average. Completion of FBA ranges from 1 week (mostly of highly experienced BA specialists and in cases functions were clearly identified) to 15 weeks, mostly in compound cases and more among newly hired BA specialists. As mentioned earlier, FA is not performed. The literature reviews suggest that FA takes 6.5 hours to complete, excluding interview time, time between sessions, and time needed for staff training (Lydon, Healy, O'Reilly, & Lang, 2012).

### **Challenges in the process of FBA**

Throughout the school year, discussions were held with MHZ director, MHZ ABA unit director, and school principals in which ABA services were provided. Two insights arose consistently in these discussions. First, the consumers, MHZ director and school staff, were both enthralled and satisfied with the professionalism of the ABA service and exhibited by the BA specialists. As these are fairly young and new services in the city,

the consumers were not acquainted with ABA and thought it had adequately addressed challenges within the area of problem behavior, which have not always been addressed optimally by other intervention programs that were available in the city. Graphical display of students' performance, for example, struck as highly enlightening and informing crucial educational decisions such as educational placements, recruitment of additional support-hours, and increased scrutiny of quality and integrity of inclusion efforts.

Second insight was that the length of ABA processes, albeit imperative to effect treatment, is detrimental to consumption of ABA services. The MHZ director who is in immediate and frequent contact with all school principals has raised stern concern that if FBA is very onerous and takes several months to complete, it resembles to "shooting oneself in the foot." School principals barely shoulder severe problem behavior crisis and agonize for immediate aid, while the BA specialists are apparent within the school setting, but their presence is ostensible as they aim to complete FBA first, prior to delivering assistance and guidance.

These thoughts and concerns were, as mentioned earlier, consistent across the year and one reason which stimulated the efforts to scrutinize and optimize FBA practices. The BA specialists were asked in the questionnaire about challenges and hurdles they had experienced completing FBA in the schools. The reported challenges were divided into three categories based on their nature: organization-related challenges, BA competency-based challenges, and indirect behavior analytic challenges.

### ***Organization-related challenges***

These challenges are unique to the school organizational and administrative structure and may not appear, for example, in other settings ABA services are provided such as home-based programs.

- (1) Scheduling issues: Scheduling with teachers for indirect assessment and coordinating with the educational teams for a pre-launch meeting where FBA data and intervention procedures are presented.
- (2) Efficient observation times: As BA specialists provide services for several schools and commute from one to another, their presence in any one school is time-limited. The change of school or preschool schedule results in missing critical observation time and context. In addition, it is not rare schools' tolerance to problem behaviors has been exhausted and the student of interest is suspended, which hinders direct observations. Other ecological problems are related to students being absent or tardy on day of observation.

### ***BA competency-related challenges***

These challenges are directly related to skill proficiency of the BA specialist.

- (1) High rates of inappropriate behaviors which pose difficulty of pinpointing which of the behaviors to observe and how to do so.
- (2) Observation and coding skills: Selecting appropriate coding systems, using direct observation coding sheets that include sufficiently sensitive behavioral and environmental codes, and graphing the collected information.

- (3) Identifying functions: In some cases, especially those in which multiple functions of behavior exist, BA specialists were challenged by precisely identifying those functions and the differential magnitude of their effect.
- (4) Reinforcer assessment and developing stimulus control: Albeit not formally part of the FBA process, these two elements often precede the beginning of a behavioral intervention. These challenges are related to discovering potent reinforcers for students and establishing positive cooperating relationship with them. BA specialists at times could not complete reinforcer assessment or begin an intervention as students refused joining them for treatment outside or even inside the classroom.

### ***Indirect behavior analytic–related challenges***

These challenges are not skill-based, but characterize the hurdles a behavior analyst, in particular, may encounter. They require good and effective interpersonal communication skills, ability to maintain good relationships and rapport, persuade and influence others by making solid arguments, and provide multiple examples audience can relate to and comprehend (Bailey & Burch, 2010).

- (1) Misconceptions and concerns regarding behavioral treatment: Misunderstandings as to what ABA is and how its services are provided. Among the concerns are needless repetitive practice, animal training, rigidity, and use of edible reinforcers inappropriately.
- (2) Resistance of treatment mediators: Oppositions of intervention mediators such as classroom teacher or aid, who may be responsible for delivering some procedures of the behavioral intervention. Oppositions may be overt or covert.

### **Lessons in global context**

This article described FBA processes that are entirely new in the public education system. To date, there is no published work that reviews the process in Israel. On the other hand, the country experiences a growing demand for ABA services. The growth in the public system in central and large urban cities is rapid and slower in remote rural areas of the country. The non-legalized status of BA in Israel does not aid quality control of these services. This closing section provides experience-based recommendations discussed in global context that could serve as valuable insights for countries sharing similar status and experiencing similar growth processes particularly as it relates to FBA in public schools systems.

#### ***Lesson 1***

Organization maturity and readiness for FBA. One of the challenges encountered in the process of developing and delivering quality ABA services has been completion of FBA adequately to inform appropriate selection of intervention procedures, and also to address the burning issues in schools in a timely manner. Functional analysis can be

of assistance, expediting the assessment process. The question is whether the public school system in Israel is mature and ready for experimental FA (Ayvazo & Eldar, *in press*). Readiness and maturity are a function of at least two processes. One is a top-down process, which involves establishment of a legalized status for ABA services in general, or for implementation of FBA procedures as stipulation to intervening on special needs that are based on disruptive behavior in particular. The top-down process is obligated in the United States since 1997 and permeates to the educational field since then (Gresham et al., 2001). Second is a bottom-up approach similar to the one occurring in MHZ, which involves establishment of an inner-organization policy, at the urban level, as to how services are to be delivered, adherence to that policy and continued review, evaluation, and refinement, as growth of need, service, and demand increase. The bottom-up process includes establishing positive and reliable relationships with the constituents. This is an imperative basis to then providing them with FA information including its rationale, practicality, and ethical conduct (Ayvazo & Eldar, *in press*; Hanley, 2012).

### **Lesson 2**

Growth of demand and supply must be in concert to ongoing enhancement of service quality. BA specialist reports presented in this article indicate lack of confidence conducting FA and accurately identifying behavior function. FA is a complex procedure, often needed in compound cases involving severe high-risk behaviors. FA requires expertise, and improving BA specialists' proficiency in FA is paramount. Nonetheless, a significant gap exists between conceptual understanding of FA and procedural knowledge demonstrated in the laboratory, and its remote application in the much less controlled school setting. Effective preparation should provide hands-on training in FA procedures specifically geared to the classroom (see Gable et al., 2014). Training would address all facets from collecting data, developing hypothesis, creating proper protocols, executing them, and supervising the execution of the protocol by others such as school personnel. Pre-service practice should provide ample opportunities to operate within the dynamic school setting and reach fluency and mastery levels (Bernstein & Dotson, 2010) in those settings, to the extent possible. The literature that reviews and analyzes FA adaptations to school settings (e.g., Lydon et al., 2012; Mueller et al., 2011; Solnick & Ardoin, 2010) is emerging and should inform pre-service training and professional development workshops.

### **Lesson 3**

Communicating the science to consumers. BA specialists cannot operate in schools in isolation and be suffice with a high yet narrow set of BA procedural proficiencies. Especially if ABA and its application in school are fairly new, BA specialists are obliged to enhance the knowledge of consumers and decision-makers such as school principals, superintends, and alike. Information on nature of FBA and ABA procedures, time for completion of the FBA process, resources needed, how treatment is suited to the individual, and how the intervention unfolds could facilitate tolerance and assimilation of the FA model and increase cooperation and communication between the BA

specialist and other education professionals. The information could be provided in formal meetings, informal conversation, and should be visible on statutory documents such as the Individual Education Plan.

## Summary

Despite growing demand for ABA services and increasing numbers of people practicing in this arena in Israel, there is no formal recognition of ABA as a profession. This article delineated growing processes of ABA in the state of Israel, focusing on FBA processes as the best practice and standard for quality ABA treatment in schools. While evolution of BA services in MHZ is uniquely advanced and presumably does not represent similar processes in other cities across the state, insights and lessons shared in this article may serve other venues and communities going through similar path of fruition.

## Acknowledgments

The author wishes to thank all behavior analysts in MATIA Holon-Azur for their dedicated clinical work and contribution to the data set presented in this article.

## Disclosure statement

No potential conflict of interest was reported by the author.

## References

- Ayvazo, S., & Eldar, E. (in press). Understanding challenging behavior: Functional behavior assessment. *Eyunim Behinuch*.
- Bailey, J., & Burch, M. (2010). *25 Essential skills and strategies for the professional behavior analyst*. New York, NY: Routledge.
- Beavers, G. A., Iwata, B. A., & Lerman, D. C. (2013). Thirty years of research on the functional analysis of problem behavior. *Journal of Applied Behavior Analysis, 46*, 1–21. doi:10.1002/jaba.v46.1
- Bernstein, D., & Dotson, W. (2010). Promoting teaching excellence in professional education of behavior analysis. *European Journal of Behavior Analysis, 11*, 277–288.
- Central Bureau of Statistics, Israel. Retrieved December 15, 2014, from the website: [http://www.cbs.gov.il/reader/?Mival=cw\\_usr\\_view\\_SHTML&ID=188](http://www.cbs.gov.il/reader/?Mival=cw_usr_view_SHTML&ID=188)
- Dorsey, M. F., Weinberg, M., Zane, T., & Guidi, M. M. (2009). The case for licensure of applied behavior analysts. *Behavior Analysis in Practice, 2*(1), 53–58.
- Durand, V. M., & Crimmins, D. B. (1988). Identifying the variables maintaining self-injurious behaviors. *Journal of Autism and Developmental Disorders, 18*, 99–117. doi:10.1007/BF02211821
- Gable, R. A., Park, K. L., & Scott, T. M. (2014). Functional behavioral assessment and students at risk for or with emotional disabilities: Current issues and considerations. *Education and Treatment of Children, 37*(1), 111–135. doi:10.1353/etc.2014.0011
- Gresham, F. M., Watson, T. S., & Skinner, C. H. (2001). Functional behavior assessment: Principles, procedures, and future directions. *School Psychology Review, 30*(2), 156–172.
- Gumpel, T. (1996). Special education law in Israel. *The Journal of Special Education, 29*(4), 457–468. doi:10.1177/002246699602900407

- Hanley, G. P. (2012). Functional assessment of problem behavior: Dispelling myths, overcoming implementation obstacles, and developing new lore. *Behavior Analysis in Practice*, 5(1), 54–72.
- Hughes, J. C., & Shook, G. L. (2007). Training and certification of behaviour analysts in Europe: Past, present and future challenges. *European Journal of Behavior Analysis*, 8, 239–249.
- Iwata, B. A., DeLeon, I. G., & Roscoe, E. (2013). Reliability and validity of the functional analysis screening tool. *Journal of Applied Behavior Analysis*, 46, 271–284. doi:10.1002/jaba.v46.1
- Kern, L., Dunlap, G., Clarke, S., & Childs, K. E. (1994). Student-assisted functional assessment interview. *Assessment for Effective Intervention*, 19, 29–39. doi:10.1177/073724779401900203
- Lewis, T. J., Scott, T. M., & Sugai, G. (1994). The problem behavior questionnaire: A teacher-based instrument to develop functional hypotheses of problem behavior in general education classrooms. *Assessment for Effective Intervention*, 19, 103–115. doi:10.1177/073724779401900207
- Lydon, S., Healy, O., O'Reilly, M. F., & Lang, R. (2012). Variations in functional analysis methodology: A systematic review. *Journal of Developmental and Physical Disabilities*, 24, 301–326. doi:10.1007/s10882-012-9267-3
- March, R. E., Horner, R. H., Lewis-Palmer, T., Brown, D., Crone, D. A., Todd, A. W., & Carr, E. G. (2000). *Functional assessment checklist for teachers and staff (FACTS)*. Eugene: University of Oregon.
- Meadan, H., & Gumpel, T. P. (2002). Special education in Israel. *Teaching Exceptional Children*, 34(5), 16–20.
- Ministry of Education, Department of Special Education, Israel. Retrieved December 15, from the website: <http://cms.education.gov.il/EducationCMS/Units/Special/Misgerot/Hazagt/>
- Mueller, M. M., Nkosi, A., & Hine, J. (2011). Functional analysis in public schools: A summary of 90 functional analyses. *Journal of Applied Behavior Analysis*, 44, 807–818. doi:10.1901/jaba.2011.44-807
- O'Neill, R. E., Horner, R. H., Albin, R. W., Sprague, J. R., Storey, K., & Newton, J. S. (1997). *Functional assessment and program development for problem behavior: A practical handbook* (2nd ed.). Pacific Grove, CA: Brooks/Cole Publishing.
- Solnick, M. D., & Ardoin, S. P. (2010). A quantitative review of functional analysis procedures in public school settings. *Education and Treatment of Children*, 33, 153–175. doi:10.1353/etc.0.0083
- Special education law of 1988 (1988). *Sefer Hahukkim*, 1256, 114–118.
- Vollmer, T. R., & Northup, J. (1996). Some implications of functional analysis for school psychology. *School Psychology Quarterly*, 11(1), 76–92. doi:10.1037/h0088922