

# Activity-Based Intervention Practices in Special Education

Arzu ÖZEN<sup>a</sup>  
Anadolu University

Yasemin ERGENEKON  
Anadolu University

## Abstract

Teaching practices in natural settings such as activity-based intervention (ABI) are suggested as alternatives to be used in effective early childhood education. As a multidisciplinary model, ABI consists of four components, which are choosing activities according to the child's interests; teaching generalizable goals embedded in routines and planned activities; and using before and after behavior stimuli which have natural and meaningful relations with behaviors. The benefits of using ABI within instructional settings include providing children with multiple-practice opportunities; teaching the target skill within the framework of daily routines without further need for any extra activity; focusing on children's interests and intrinsic motivation; and enhancing the level of success in educational settings. Considering these advantages and benefits, one can state that practices based on activity-based intervention can be used effectively for children with developmental disabilities from various age and disability groups. This article included descriptions and examples of activity-based intervention.

## Key Words

Children with Developmental Disabilities, Naturalistic Instruction, Activity-Based Intervention, Early Intervention.

There are many research findings on the effectiveness of techniques based on Applied Behavior Analysis (ABA) such as direct instruction, errorless teaching, and discrete trial teaching to teach children with developmental disabilities (with mental retardation and/or autism) for various concept and skill teaching (Alberto & Troutman, 2006; Tekin & Kircaali-İftar, 2004). Some of the targets for teaching children with developmental disabilities are teaching new skills, increasing or decreasing the acquired behaviors, and maintaining and generalizing the acquired behaviors (Kircaali-İftar, 2007). However, research shows that in most of these ABA based techniques, learning usually happens during the acquisition (becoming able to do what could not before) phase. The lack effectiveness on the other phases of learning which are fluency (perform the behavior fast and easy), maintenance (performing behavior after the instruction), and generalization (performing behavior in different circumstances) is

apparent (Alberto & Troutman, 2006; Kerr & Nelson, 1998). By using ABA based techniques, skills are taught with adult guidance and within highly structured instructional arrangements. This is considered as the resource for the limitation that is mentioned above. In order to overcome this limitation, various techniques have recently been suggested in the literature that could be implemented in natural settings as an alternative for practitioners and researchers (Engelmann, 2003; Newman, Needelman, Reinecke & Robek, 2002; Schug, Tarver & Western, 2001; Wolery, Ault, & Doyle, 1992). In teaching techniques which are used in natural environments, teaching aims to be realized in the natural setting and to be systematic (Bricker, Preti-Frontczak, & McComas, 1998; Kurt & Tekin-İftar, 2008; McBride & Schwartz, 2003). Besides, it is also mentioned that teaching techniques which are used in natural settings are more appropriate for inclusion environments and for parents to teach new skills to their children in their daily routines (Bricker, et al., 1998; Woods, Kashinath, & Goldstein, 2004).

<sup>a</sup> Correspondence: Assoc. Prof. Arzu ÖZEN, Anadolu University, Research Institute for the Handicapped, 26470 Eskişehir/Turkey. E-mail: aozen@anadolu.edu.tr. Phone: +90 0 222 3350580/4971 Fax: +90 0 222 3352914

Instructional techniques in natural settings are used more often for the education of individuals with developmental disabilities. Instructional techniques that are used in natural settings that are

stated in the literature are incidental teaching, naturalistic time delay, mand-model, milieu teaching, transition-based teaching, and activity-based intervention (Allen & Cowan, 2008). In this study, ABI will be approached from the above instructional techniques that are used in natural settings.

### Activity Based Intervention (ABI)

As a multidisciplinary model, ABI was first used by Diane Bricker and her colleagues at the University of Oregon (Bricker et al., 1998; Daugherty, Grisham-Brown, & Hemmeter, 2001; Kurt & Tekin-İftar, 2008; McBride & Schwartz, 2003). Although there are plenty of studies conducted on this title, ABI still needs to be determined more precisely (Rakap & Parlak-Rakap, 2008). In this study, the authors preferred to use the term Activity-Based Intervention (ABI). Pretti-Frontczak and Bricker (2004) listed common points in the research in this area as below:

1. Choosing activities according to the child's interests
2. Teaching individual goals embedded in routines and planned activities
3. Teaching functional and generalizable skills
4. Using before and after behavior stimuli which have natural and meaningful relations with behaviors and environment.

**Choosing Activities according to the Child's Interests:** It is important to identify children's interests and choose child-directed activities according to these interests during early childhood education. If the activity is interesting for the child, it will be more meaningful for him/her and the teacher will not need to present extra reinforcers for the activity (Kurt, 2008; Pretti-Frontczak & Bricker, 2004).

Child initiated activities and actions are known to be more functional, gripping, and useful for the child than the activities that were initiated by adults. Whenever the child initiates an activity or action, the adult should always encourage him/her, and diversify it by extending the activity, no matter what it is (Pretti-Frontczak & Bricker, 2004). Child-initiated activities should be determined as long or short-term targets of the child (Lovaas, 2003).

**Teaching Individual Goals Embedded in Routines and Planned Activities:**

**Teaching Individuals Goals Embedded in Routine Activities:** The order that is followed for daily

life activities is called a routine. Daily routines are important especially for young children to learn. The child will feel both safer in the orderly daily life routines and also this will provide various learning opportunities for the child (Vuran, 2007). Children encounter and get involved in these routine activities either at home or at school every day.

Short and long term goals that are tried to be taught to children by using routine activities can be diversified. Many skills and concepts for preschool children can be worked out embedded in daily routines in the natural setting where they happen, without spending any extra time (Pretti-Frontczak & Bricker, 2004).

### Teaching Individual Goals Embedded in Planned

**Activities:** Goals determined for children can also be taught by embedding them in planned activities. Yet, planned activities are generally carried out with an adult's guidance or participation. Planned activities provide different learning opportunities in games. Therefore, planned activities should be well-designed. Planned activities should be desirable for the child and should be prepared according to the child's interests (Pretti-Frontczak & Bricker, 2004). An activity plan should be prepared for these kinds of activities. This activity plan includes the name of the activity, materials needed, environmental arrangements, sequencing the steps of the game/activity, embedded learning opportunities, planned changes, target words, opportunities for peer interaction, and how parents or caregiver will be participating in the activity (Pretti-Frontczak & Bricker, 2004).

### Teaching Functional and Generalizable Target

**Skills:** Functional skills are the skills that enhance a child's independence and improve the quality of life for him/her in his/her physical and social environment (Bricker et al., 1998). The age of the child and practicality of the skills in daily life is important functional skills. For example, although naming the days of the week is not functional for a two year-old child, it is a functional skill for a seven year-old child. For this, teachers should determine functional skills for children according to their specifications.

Goals determined for the child should also be generalizable. A skill is generalizable when it is performed in different settings with different people and materials (Kurt, 2008).

### Using Before and After Behavior Stimuli which Have Natural and Meaningful Relations with Behaviors and Environment:

A child may not always develop desired behavior change even though s/he participates in the child-initiated, routine, and

planned activities. Therefore, the teacher needs to prepare a systematic working plan in order to have children gain desired behaviors and reach satisfying results. When looked from this point of view, ABI does not mean for the child to do whatever activity he/she wants or leave them free while they play to learn by themselves. To assure desired behavior change, teacher should create enough opportunities for behavior to be performed, prepare necessary materials, determine the waiting time for independent response and provide prompting for behavior to be performed when necessary such as asking questions, modeling, and physical assistance. In this process, the reinforcements that are not related directly with the behavior and that are added to environment separately should be used as little as possible and activity itself should become reinforcement (Kurt, 2008).

### Related Research

The research on ABI shows that it is effective for preschool children and children who are in different age and disability groups with developmental disabilities (Johnson & McDonnell, 2004; Kurt & Tekin-İftar, 2008; McDonnell et al., 2006). While in some of these studies preschool children were taught various developmental area skills, in others academic skills were taught to children who are in inclusion settings. Also, teachers' practices of ABI were studied by some researchers.

In general, the research on effectiveness of ABI shows that it is used for teaching preschool children various skills such as imitating (Venn et al., 1993), social skills (Macy & Bricker, 2007), dressing and undressing (Sewell, Collins, Hemmeter, & Schuster, 1998), leisure activities (Kurt & Tekin-İftar, 2008), and transition skills (Bakkaloğlu, 2008). Another group of research was conducted on the effectiveness of teaching academic skills in inclusion settings such as counting numbers (Daughtery et al., 2001), reading words (Wolery, Wolery, Anthony, Caldwell, Snyder, & Margante, 2002), asking for help, reading words and showing the bigger number (Johnson & McDonnell, 2004), answering questions related with science lesson, reading words and demanding (Johnson, McDonnell, Holzwarth, & Hunter, 2004), and telling the definitions of words (McDonnell et al., 2006). Another research title in this area is about how teachers use ABI in their practices (Horn, Lieber, Sandal, & Schwartz, 2000; Pretti-Frontczak & Bricker, 2001; McBride & Schwartz, 2003).

As a result, the research demonstrates that ABI practices are used by researchers, and/or teachers

for teaching children with developmental disabilities various skills and behaviors and teachers use this technique in their classrooms comfortably. Based on the results of research in the literature, the steps that need to be taken to spread the practice of ABI in our country are stated below in the discussion and suggestion section.

### Discussion and Suggestions

ABI is an important subject that is studied within early childhood education programs worldwide. The literature demonstrates that ABI is effective for teaching various skills and behaviors to both preschool children and children with developmental disabilities in different ages. Moreover, teachers are pleased to use this method for these children in their classrooms (Johnson & McDonnell, 2004; McBride & Schwartz, 2003; McDonnell et al. 2006). ABI practices are not used in Turkey as often while working with children with developmental disabilities. In the US and Canada, ABI practices in early childhood education practices are included in the recommended practices. In Turkey, there is only one study which used embedded teaching and response prompting together (Kurt & Tekin-İftar, 2008). ABI is not given as a separate class in the preschool teacher training and special education teacher training programs. This might be the reason of the limited usage of ABI in the schools. Moreover, if the skills and concepts that are in educational programs placed in daily routines in natural settings, it will provide multiple learning opportunities and there will not be a need for an extra teaching time to teach these skills and concepts. The studies presented in this paper demonstrate that ABI is effective teaching children with different types of developmental disabilities (autism, mental retardation, cerebral palsy, etc.) both academic and non-academic skills in different educational settings. Moreover, the studies demonstrate that the new skills learned by using ABI are generalized to different people, environment, activities, and materials by children with disabilities. From these results, ABI eliminates the limitation of permanency and generalizability of the other techniques based on ABA and it can be suggested as an alternative practice for practitioners. The suggestions related to the ABI practices and future research are below.

### Suggestions for Future Research

1. Research can be conducted to examine the effectiveness and efficiency of practices based on ABI with different practitioners for children with different type of disabilities.

2. The effectiveness and efficiency of applying ABA based practices with ABI can be examined. Moreover, generalizability and permanency could be examined in these researches.

### Suggestions for Practice

1. Assessment tools based on ABI may be used while determining pre-school children's performance levels related with concepts and skills.
2. Planned game activities may be employed in order to teach skills and concepts for pre-school children and children in inclusion settings.
3. Multiple learning opportunities may be created by embedding the skills and concepts in the curriculum into daily routines in natural settings.
4. ABI practices may be suggested for parents and peers to use because they are easy and practical.
5. ABI practices could be placed in the curriculum of special education and early childhood education in undergraduate education. This practice presents an alternative practice example and enriches the current system.

### References/Kaynakça

- Alberto, P. A., & Troutman, A. C. (2006). *Applied behavior analysis for teachers* (7th ed). Upper Saddle River, New Jersey: Pearson.
- Allen, K. D., & Cowan, R. J. (2008). Naturalistic teaching procedures. In J. K. Luiselli, D. C. Russo, W. P. Christian & S. M. Wilczynski (Eds.), *Effective practices for children with autism: Educational and behavioral support interventions that work* (pp. 213-240). Oxford University Press.
- Bakkaloğlu, H. (2008). The effectiveness of activity-based intervention program on the transition skills of children with developmental disabilities aged between 3 and 6 years. *Kuram ve Uygulamada Eğitim Bilimleri*, 8, 393-406.
- Bricker, D., Pretti-Frontczak, K., & McComas, N. (1998). *An activity-based approach to early intervention* (2nd ed). Baltimore: Paul Brooks Pub.
- Daugherty, S., Grisham-Brown, J., & Hemmeter, M. L. (2001). The effects of embedded skill instructions on the acquisition of target and nontarget skills in preschoolers with developmental delays. *Topics in Early Childhood Special Education*, 21, 213-221.
- Engelmann, S. (2003). The benefits of direct instruction: Affirmative action for at-risk students. *Association for Supervision and Curriculum Development*, 57 (1), 77-79.
- Horn, E., Lieber, J., Sandall, S., & Schwartz, I. (2000). Supporting young children's IEP goals in inclusive setting through embedded learning opportunities. *Topics in Early Childhood Special Education*, 20, 208-223.
- Johnson, J. W., & McDonnell, J. (2004). An exploratory study of the implementation of embedded instruction by general educators with students with developmental disabilities. *Education & Treatment of Children*, 27, 46-64.
- Johnson, J. W., McDonnell, J., Hozwarth, V. N., & Hunter, K. (2004). The efficacy of embedded instruction for students with developmental disabilities enrolled in general education classes. *Journal of Positive Behavior Interventions*, 6, 214-217.
- Kerr, M. M., & Nelson, C. M. (1998). *Strategies for managing behavior problems in the classroom* (4th ed). Upper Saddle River, New Jersey: Merrill.
- Kırcaali-İftar, G. (2007). *Ötizm spektrum bozukluğu*. İstanbul: Daktylos Yayınları.
- Kurt, O. (2008). Doğal öğretim yöntemleri. E. Tekin-İftar (Ed.), *Davranış ve öğrenme sorunu olan çocukların eğitimi içinde* (s. 162-179). Eskişehir: Anadolu Üniversitesi Açıköğretim Fakültesi Yayınları.
- Kurt, O., & Tekin-İftar, E. (2008). A comparison of constant time delay and simultaneous prompting within embedded instruction on teaching leisure skills to children with autism. *Topics in Early Childhood Special Education*, 28, 53-64.
- Lovaas, O. I. (2003). *Teaching individuals with developmental delays basic interventions techniques*. Austin, Texas: Pro-Ed, Inc.
- Macy, M. G., & Bricker, D. D. (2007). Embedding individualized social goals into routine activities in inclusive early childhood classrooms. *Early Child Development and Care*, 177 (2), 107-120.
- McBride, B. J., & Schwartz, I. S. (2003). Effects of teaching early interventionists to use discrete trials during ongoing classroom activities. *Topics in Early Childhood Special Education*, 23, 5-17.
- McDonnell, J., Johnson, J. W., Polychronis, S., Risen, T., Jameson, M., & Kercher, K. (2006). Comparison of one-to-one embedded instruction in general education classes with small group instruction in special education classes. *Education and Training in Developmental Disabilities*, 41, 125-138.
- Newman, B., Needelman, M., Reinecke, D. R., & Robek, A. (2002). The effect of providing choices on skill acquisition and competing behavior of children with autism during discrete trial instruction. *Behavioral Instruction*, 17 (1), 31-41.
- Pretti-Frontczak, K., & Bricker, D. (2001). Use of embedding strategy during daily activities by early childhood education and early childhood special education teachers. *Infant-Toddler Intervention*, 11 (2), 11-128.
- Pretti-Frontczak, K., & Bricker, D. (2004). *An activity-based approach to early intervention* (3rd ed). Baltimore: Paul Brooks Pub.
- Rakap, S. ve Parlak-Rakap, A. (2008, Kasım). *Doğal ortamda öğretim tekniklerinin okulöncesi özel gereksinimli çocuklar üzerindeki etkileri*. 18. Ulusal Özel Eğitim Kongresi'nde sunulan bildiri. Selçuk Üniversitesi, Konya.
- Schug, M. C., Tarver, S. G., & Western, R. D. (2001). Direct instruction and the teaching of early reading. *Policy Research Institute*, 14 (2), 5-21.
- Sewell, T., Collins, B. C., Hemmeter, M. L., & Schuster, J. W. (1998). Using simultaneous prompting within an activity based format to teach dressing skills to preschoolers with developmental delays. *Journal of Early Intervention*, 21, 132-145.
- Tekin, E. ve Kırcaali-İftar, G. (2004). Özel eğitimde yanlışsız öğretim yöntemleri (2. bs). Ankara: Nobel.
- Venn, M. L., Wolery, M., Werts, M. G., Morris, A., DeCesare, L. D., & Cuffs, M. S. (1993). Embedding instruction in art activities to teach preschoolers with disabilities to imitate their peers. *Early Childhood Research Quarterly*, 8, 277-294.
- Vuran, S. (2007). Tüm hizmet planı: BEP ve öğretim uyarlamaları. O. Gürsel (Ed.), *Bireyselleştirilmiş eğitim programlarının geliştirilmesi* (s. 119-140). Eskişehir: Anadolu Üniversitesi Açıköğretim Fakültesi Yayınları.
- Wolery, M., Anthony, L., Caldwell, N. K., Snyder, E. D., & Margante, J. D. (2002). Embedding and distributing constant time delay in circle time and transitions. *Topics in Early Childhood Special Education*, 22, 14-25.
- Wolery, M., Ault, M. J., & Doyle, P. M. (1992). *Teaching students with moderate to severe disabilities: Use of response prompting strategies*. New York, NY: Longman.
- Woods, J., Kashinath, S., & Goldstein, H. (2004). Effects of embedding caregiver implemented teaching strategies in daily routines on children's communication outcomes. *Journal of Early Intervention*, 26, 175-193.