



Culturally Relevant Pedagogy and Applied Behavior Analysis: Addressing Educational Disparities in PK-12 Schools

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Abstract

The purpose of this article is to describe the theory of culturally relevant pedagogy (CRP) and its application to PK–12 education for behavior analysts working in schools. CRP is an educational framework that asserts that successful teachers of African American students help their students gain three repertoires: (1) sociopolitical awareness, (2) cultural competence, and (3) academic excellence. The CRP framework was designed to counter the effects that racial bias has on the academic and disciplinary experiences of some students of color. This article suggests that applied behavior analysis and CRP, when used together, may strengthen educators' efforts to reduce the effects of racism that some students of color experience. The authors first explain the tenets of CRP based on the work of Ladson-Billings (1995a, 1995b). Next, points of convergence between ABA and CRP are described. Finally, the authors offer recommendations for behavior analysts to consider when applying CRP in schools through the provision of examples of strategies and tactics derived from the behavioral literature that align with the CRP framework. The framework presented in this article has implications for behavior analysts interested in applying culturally relevant practices to their work as educators.

Keywords Cultural competence · Culturally relevant pedagogy · Culturally relevant teaching · Racism · Discrimination · Technology of teaching

The educational disparities that many American children from Black, Hispanic/Latinx, Asian/Pacific Islander, and Native

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American racial groups experience are rooted in a history of institutionalized racism in schools that enforced inequitable systems of education. For instance, from the late 19th to the mid-20th centuries, almost half of all Native American school children were forcibly placed in boarding schools that attempted to eliminate their cultural identities (Evans-Campbell et al., 2012; Lajimodiere, 2013). Anti-literacy laws forbade African Americans from learning to read during slavery and subsequent segregation laws prohibited their children from attending integrated schools until the 1950s (Williams, 2005). Chinese American and Latino American children also experienced legal discrimination through school segregation (Contreras & Valverde, 1994; Kuo, 1998). Today the majority of Black, Latinx, and Native American elementary and secondary students read at a basic or below basic level (National Assessment of Educational Progress, 2019) and experience harsher disciplinary actions than white students (Bates & Glick, 2013; Skiba et al., 2011). Such forms of institutionalized inequities have long-term impacts on students of color (Danielson, 2002; Jones & Nichols, 2013; Levin & Rouse, 2012), and contribute to the “achievement gap” that describes differences in academic outcomes between white students and

Black, Hispanic/Latinx, Asian/Pacific Islander, and Native American students (Downey & Pribesh, 2004; Fabelo et al., 2011; Farkas et al., 1990; Skiba et al., 2011).

According to the National Center for Education Statistics (National Center for Education Statistics, 2019), approximately 5.6 million students are enrolled in PK–12 schools in the United States. White students are the largest racial group followed by Black, Hispanic/Latinx, Asian/Pacific Islander, and multiethnic students (National Center for Education Statistics, 2019). The majority of teachers in PK–12 schools are white and largely female; this group represents 72% of all teachers (National Center for Education Statistics, 2019). Although trends show that student demographics in classrooms are becoming more diverse, the demographics of teachers remain consistently white female (National Center for Education Statistics, 2019). The demographic makeup of schools is important because research shows that students of color with white teachers are more likely to receive lower behavioral and academic ratings than their white peers, and are more likely to experience harsher and higher rates of disciplinary actions including referrals, suspensions, and expulsions (Bates & Glick, 2013; Skiba et al., 2011). In addition, according to the Behavior Analyst Certification Board's demographic data (Behavior Analyst Certification Board, 2020a), the majority of all ABA certificants are also white and largely female. White BCBAAs are the largest group (71.82%), followed by Latinx BCBAAs (9.34%), Black BCBAAs (3.60%), and Asian, Native Hawaiian/Pacific Islander, Native American/Alaskan Native who combined represent less than 7% of all BCBAAs. These combined statistics about professionals both in the fields of education and behavior analysis make it socially significant to find ways to engage in culturally informed practices.

Throughout its history, the field of applied behavior analysis has used principles of behavior to address educational inequities experienced in schools. For instance, Risley and Hart (1968) and Hart and Risley (1974, 1975, 1980) published a series of studies focused on early interventions for African American children who were economically disadvantaged. The culmination of their work (Hart & Risley, 1995) and data from education projects such as Project Follow-Through (Becker & Gersten, 1982) contributed to academic programs that improved the outcomes of other children who were disenfranchised. In fact, many behavior analysts in the 1960s and 1970s focused their applications of behavior analysis on effective instruction that promoted academic achievement and social well-being for Black and Brown children who were economically disadvantaged (see Fontenot et al., 2019, for a review). Their work contributed to a larger social movement to fight discrimination, segregation, and lack of opportunity in communities in poverty (Engelmann, 1999) and their research efforts formed the basis for interventions currently used nationally by educators (e.g., Stockard et al., 2018). In fact, behavior analysts still apply principles of behavior to develop

interventions that address critical educational issues where racial and economic inequities such as literacy and discipline disparities persist in PK–12 schools (e.g., Good III et al., 2019; Horner & Sugai, 2018). In addition, behavior analysts have contributed to the development of a science of teaching and teaching that helps teachers apply principles of behavior to classroom-based pedagogy (Greer, 2002).

Despite behavior analysts' history of efforts to ameliorate racial and socioeconomic inequalities in the U.S. education system, there is a need to continue to address racial and socioeconomic issues that disproportionately affect students of color. For example, data indicate that education-related issues such as school segregation are increasing in today's school systems (Mervosh, 2019). The continuing presence of segregation and other issues that affect Black and Brown children indicate a need for behavior analysts to refocus efforts in schools on social justice. Yet, some behavior analysts report that they do not feel prepared to work with culturally diverse groups after completing ABA graduate training programs (Conners et al., 2019).

In response to the need to serve an increasingly diverse population in schools, culturally relevant pedagogy (CRP) has become a recommended approach from state and professional educational organizations teaching children from diverse backgrounds (Muñiz, 2019). CRP is a theoretical framework developed by Ladson-Billings (1995b) that emphasizes the strengths students bring to the classroom and leverages those strengths during teaching. The framework is built on three practices that successful teachers of Black children use in their teaching during research conducted by Ladson-Billings (1995a): (1) cultural competence, (2) sociopolitical awareness, and (3) academic excellence. Although CRP has been applied in PK–12 classrooms, few articles have discussed the application of CRP for behavior analysts working in schools. Given the number of successful applications of behavior analysis to schools (Austin et al., 2015; Beaulieu & Hanley, 2014; Bradshaw et al., 2012; Crone et al., 2010; Galbraith & Normand, 2017; Greer et al., 2002; Hofstadter-Duke & Daly III, 2011; Johnson & Street, 2012; Ross et al., 2009; Vanselow & Hanley, 2014), exploring the implications of CRP for behavior analysts may help practitioners support an increasingly diverse PK–12 student population. The purpose of this article is to describe the theory of culturally relevant pedagogy (CRP) and its application to PK–12 education for behavior analysts working in schools by defining and describing CRP, providing connections between CRP and ABA, and providing recommendations for integrating CRP into behavior analytic practice.

Terms and Definitions

Before discussing CRP, some terms in this article will be defined. In this article, the terms *educational disparities*,

academic inequities, and *academic inequalities* refer to lower academic outcomes that disproportionately affect children of color and can be attributed in part to the limited funding, lack of access to instructional resources and materials, lack of access to highly qualified trained teachers, and oversized and overcrowded schools. *Negative school outcomes* refer to the lower test scores that some children of color experience as well as the high rates of suspension, expulsion, drop out, and entry into juvenile justice systems that have been correlated with school discipline systems. *Social and societal inequality* outcomes refer to limited earning power and lack of access to equitable health and wealth as adults.

It is also important to first define the word *culture*. Skinner (1953) defined culture as, “the contingencies of social reinforcement which generate and sustain” (p. 32) the behavior of group members. Skinner noted that although these contingencies may produce rules for a group, there are other rules that may not be as observable, making culture more complex than what an observer may see. Skinner’s (1953) definition of the complexity of culture is consistent with definitions of culture used in discussions of CRP. For example, both Ladson-Billings (2018) and Gorski (2016) eschew cultural essentialism in which a group is defined by a single dimension (e.g., African American) instead of by the multiple identities that members of a group may hold (e.g., Black, female, teenager, musician). Likewise, behavior analysts in recent publications have noted the importance of acknowledging the complexities of an individual’s cultural identities (Brodhead, 2019; Fong et al., 2016). In this discussion, we refer to *culture* as multiple identities that an individual or group may have.

Culturally Relevant Pedagogy

Culturally relevant pedagogy (CRP) is a conceptual framework that Ladson-Billings (1995a) developed to describe the behaviors of effective teachers of African American students. Ladson-Billings (1995b) observed the pedagogical practices of eight successful teachers of elementary school African American children and then used themes from their teaching to develop the CRP framework (Ladson-Billings, 1995a, 2009). The CRP framework is composed of three key practices that successful teachers of African American students implemented:

- **Sociopolitical Awareness:** Ladson-Billings (1995b) defined sociopolitical awareness as a student’s ability to critique the world and connect it back to a larger picture. In doing so, students learn to question social norms that perpetuate social inequalities and, in turn, are empowered to shift them.
- **Academic Excellence:** Ladson-Billings (2001) asserted that schools must ensure that students are academically successful. By doing so, teachers also help students access

the *culture of power*, a term that Delpit (1988) used to describe the dominant culture that one must know in order to access higher forms of education.

- **Cultural Competence:** Ladson-Billings (1995b) reported that successful teachers of African American students ensure that students know their own cultural history. Successful teachers also use students’ cultures during instruction and teach their students the culture of power (Delpit, 1988).

Since the original publication of the CRP framework in 1994, several studies have reported applications of CRP with students from different groups including racial, ethnic, economic, language, and disability groups. Table 1 operationalizes CRP practices as described in a synthesis of CRP research conducted by Morrison et al. (2008). The practices in Table 1 are included to help behavior analysts integrate CRP into their own work with PK-12 students and their teachers.

Points of Convergence between ABA and CRP

Research and practice in ABA can potentially contribute to the ongoing work of educators engaged in CRP to address bias in education. ABA is a versatile field with principles of behavior that have been applied in numerous settings, organizations, and systems. The collective knowledge in ABA has formed a foundation of evidence-based strategies that are used in multiple fields including medical health care (e.g., Addison et al., 2012; DeFulio & Silverman, 2012) and mental health care (e.g., Hayes et al., 2012; Petts et al., 2016), social and community activism (e.g., Machalicek et al., 2021; Mathur & Rodriguez, 2021), and educational programming (e.g., Greer, 2002; Hugh-Pennie et al., 2018; Trump et al., 2018) with emerging evidence in law enforcement and the justice system (e.g., Carvalho et al., 2021; Crowe & Drew, 2021; Pritchett et al., 2021). In addition, behavior analysts use research from experimental behavior analysis (e.g., Bergmann et al., 2021; Green & Freed, 1993; Harsin et al., 2021; Michael, 1982; Nergaard & Couto, 2021), and applied behavior analysis (e.g., Dixon et al., 2012; Erath et al., 2021; McKeown et al., 2021; Normand et al., 2021) as well as related fields that apply behavioral principles such as social work (e.g., Thyer, 1999).

This versatility may make the effects of ABA appear less visible or targeted to one type of population. However, the flexibility within the experimental and applied branches of behavior analysis—in conjunction with its application across professional fields of practice—is what makes it powerful for educators interested in making individual, group, organizational, and systems changes. This section concentrates on the application of ABA in educational settings and how the

Table 1 Characteristics of culturally responsive pedagogy

Characteristics of CRP	Description
Academic excellence	Model, scaffold, and clarify a challenging curriculum; use students' strengths and not only weaknesses as instructional starting points; Invest and take personal responsibility for students' success; create cooperative learning environments
Cultural competence	Reshape the prescribed curriculum; build on students' knowledge; build relationships with school and communities
Sociopolitical awareness	Critical literacy; engage students in social justice work through community projects; make explicit the power dynamics of mainstream society; share power in the classroom through personalized systems of instruction and choices in learning

Note. This table is adapted from Morrison et al. (2008). Practices are applicable to PK–12 student populations

rich diversity of practices in the field are compatible with the goals of CRP. We also describe theories and practices that underlie both ABA and CRP with the goal of helping behavior analysts learn how to apply CRP to practice. The following are areas of convergence between CRP and ABA:

- **Cultural Competence:** In many fields, the term *cultural competence* refers to the degree to which an educator or practitioner is aware of the culture of the students or clients they serve (Ladson-Billings, 2008). However, Ladson-Billings (2018) used the term *cultural competence* to describe the process by which a student learns to honor their own culture and also navigate the culture of the majority or the culture of power (e.g., white, middle-class culture in the United States). This is an important component of CRP because of the ways in which history has revised the culture of racial ethnic groups in the United States (e.g., Huffman, 2019).

Ladson-Billings (2008) asserted that teachers help their students gain cultural competence by: (1) acknowledging the reality of their students' social contexts (e.g., acknowledging the socioeconomic needs of economically disadvantaged students), (2) remembering that all students have potential for high achievement but may depend on their schools to obtain it (e.g., recognizing that economically disadvantaged students may need technology and food services from the school to participate in school during the COVID-19 pandemic), and (3) modifying the curriculum and using engaging instruction to help students acquire knowledge (e.g., realizing that mainstream curricula may need to be supplemented to show the socioeconomic and racial diversity of a group of students). In summary these three aspects of cultural competence can help a teacher understand how the individual context of a students' lived reality may present real barriers or limitations to access, opportunity, and, eventually, goal attainment. Steps must then be taken to understand how a student can gain access, increase opportunity, and decrease barriers to achieving their goals (i.e., social significance).

Engaging in cultural humility by including parents and children in any assessment of their own strengths and needs is compatible with the goals of social validity and single case design in behavior analysis (Wright, 2019). Wolf (1978) described social validity as a process that behavior analysts use to ensure that the goals, procedures, and effects of behavioral treatments are acceptable to consumers. When using social validity measures in conjunction with CRP, behavior analysts can incorporate questions about a student and their family to help ensure that teaching procedures or curricula are socially significant and acceptable (Nicolson et al., 2020). Related to this, the use of single case experimental methods lends itself to the individualization required to include a student's cultural identity in the implementation of behavioral strategies and tactics necessary for their academic success. This is because behavior analysis is applied to the behavior of individuals, which can decrease the likelihood of broad (and potentially erroneous) generalizations to groups and racial, class, or other bias-based decision making.

- **Sociopolitical Awareness:** sociopolitical awareness occurs when a teacher connects social issues in a student's community, state, country, and the world to events in their classroom. Teachers practice sociopolitical awareness by incorporating social issues into classroom lessons and then guiding students through the process of critiquing their own social viewpoints. The goal of sociopolitical awareness is to help students gain a sense of agency in their communities and the world. For example, a teacher may guide students through their own self-determined advocacy work in a school or community. It is interesting that Ladson-Billings (2008) noted that teachers themselves need to gain sociopolitical awareness as much as their students. To apply this tenet of CRP in schools, behavior analysts may partner with teachers and school leaders to employ a number of behavioral strategies and tactics that can help address academic inequalities that they observe such as unfair discipline systems and a lack

of access to technology for students. One example of applying sociopolitical awareness to behavior analytic partnerships with schools may be helping schools or districts address a high number of discipline referrals for students by providing behavior analytic classroom management or positive behavior support (Buckley, 2019; Thomas, 2021).

- **Academic Excellence:** Academic achievement is an important part of CRP because it empowers students to successfully engage in school throughout their academic careers (Ladson-Billings, 2008). ABA can greatly strengthen the use of CRP in schools with its focus on observable and measurable behaviors as well as effective teaching practices developed from research on instructional design. Examples of evidence-based interventions from behavioral education include Direct Instruction (Engelmann & Carnine, 1982), Precision Teaching (Pennypacker et al., 2003; White & Haring, 1976), Personalized System of Instruction (Keller, 1968), and Classwide Peer Tutoring (Greenwood et al., 1989; Kamps et al., 1994).

ABA can also help schools develop positive descriptions of students who are not gaining specific academic repertoires. The use of positive descriptions of students' strengths is consistent with the goals of CRP. For example, when students are described in nonscientific and pejorative terms such as *lazy* or *unmotivated*, or when their limited mastery of a subject area such as reading is attributed to *parents who are nonparticipatory*, this verbal behavior of educators shifts blame to setting events outside the control of the teacher or educational system as a whole. These nonscientific and pejorative descriptions of students perpetuate a system in which implicit bias (Gilliam et al., 2016) decreases overall accountability and leaves white teachers to subjectively determine which students are helped with assignments or peer tutoring, gain teacher directed positive feedback or corrections, and receive reinforcement for on-task behaviors instead of being corrected for off-task behaviors, sent out of a classroom for administrator consequences, or suspended.

However, a more objective analysis of instructional problems may occur when teaching and learning problems are defined in objective ways that identify students' missing repertoires, prerequisite skills, ensure teaching to mastery and fluency, and nurture mutual relationships between teachers and students through effective instruction. For instance, when teachers utilize components of ABA such as continuous measurement, it may lead to positive and objective understanding of skill acquisition for both teachers and students. For students, small gains that are observed by continuous measurement might shift their motivation and lead to increased academic engagement and response effort. For teachers, it may allow them to come into contact with positive outcomes of their work,

thereby improving their view of their own effectiveness as teachers as well as their view of students as capable of learning regardless of ability, race, gender, or socioeconomic status (Hugh-Pennie et al., 2018). Establishing the appropriate contingencies for teachers to accurately identify barriers to instruction and make sound decisions based on relevant student data as a necessary step in bridging the achievement gap between white and Black students.

Effective applications of the science of behavior to schooling describe the necessary repertoires of teachers to engage in remediating learning problems and choose effective teaching strategies. Once teachers gain these repertoires they can much more easily sustain culturally relevant teaching practices as this method of instruction leaves very little room for implicit or explicit bias to drive decision making allowing for more equity in education and a real way to bridge the achievement gap between white and Black students. Overall ABA aligns with the theoretical framework for CRP. Tangible examples are provided in Table 2.

Conclusions and Recommendations

The purpose of this article was to describe culturally relevant pedagogy (CRP) and its potential application to schooling and ABA. CRP provides a culturally relevant framework that can be applied to the practice of behavior analysts working in PK–12 schools. In this article we have provided examples of tactics and strategies derived from the behavioral literature that support the CRP framework. Research indicates that students of color experience lower academic outcomes and harsher discipline because of bias from teachers, schools, and districts. However, CRP and ABA has the potential to mutually strengthen efforts to ameliorate the effects of racial bias in schools by focusing on strengths-based views of students, ensuring that students learn to honor their own cultures and can engage in the dominant culture, helping teachers and students engage in sociopolitical awareness through the use of effective instructional tools derived from research in behavior analysis and related fields, and contributing academic and behavioral interventions to students and schools that need them.

As Ladson-Billings (2018) noted in the description of sociopolitical awareness, it is important for behavior analysts to advocate for school and work environments that support children and educators who will inevitably face issues of racial bias in their daily lives and practice. It would be irresponsible to assume that behavior analysts are above such biased treatment and do not harbor or act on similar implicit biases. To provide a high quality, more culturally relevant standard of

Table 2 How ABA converges with culturally responsive pedagogy

Academic achievement (i.e., academic rigor)	Cultural competence	Critical consciousness (i.e., sociopolitical awareness)
Three-term contingency component analysis, task analysis, (in-vivo and video) modeling, prompt and prompt fading, chaining, shaping, and teaching of prerequisite skills to fluency, Precision Teaching (PT), Direct Instruction (DI), (ABA) as tactics to model, scaffold and clarify challenging curriculum (CRP)	Using students' interests and experience as a basis for instruction, connections to real-world as MOs for learning (ABA) as tactics to re-shape the prescribed curriculum (CRP)	Basic academic literacy curricula (e.g., Direct Instruction [DI] reading curriculum) (ABA) as tactics to gain critical literacy (CRP)
Criterion-referenced assessments and individualized instructional plans (ABA) as tactics to use student strengths as instructional starting points (CRP)	Building on prior knowledge, stepwise systematic changes based on student prerequisite skills (ABA) as tactics to build on students' funds of knowledge (CRP)	Problem-solving curricula (ABA) as prerequisites to engaging students in social justice work (CRP)
Teacher Performance Rate and Accuracy tool (TPRA), Morningside Model of Generative Instruction (MMGI), data-based decision analysis, verbally governed decision making to identify the problem in the three-term contingency (ABA) as tactics to invest and take personal responsibility for students success (CRP)	Parent performance rate and accuracy (PPRA), individual/group parent training, daily behavioral support cards, social skills instruction, conversational units, and exchanges to establish relationships and build friendships, direct and indirect assessment, preference assessment for recommended strategies (ABA) as tactics to encourage relationships between schools and communities (CRP)	Problem-solving curricula (ABA) as prerequisites to making explicit the power dynamics of mainstream society (CRP)
High rates of positive reinforcement for individual and group responding, class wide peer tutoring, and enlarging communities of reinforcers (ABA) as tactics to creating and nurturing cooperative learning environments (CRP)		Teacher and student-directed instruction, peer-tutoring, classwide peer tutoring (CWPT), personalized systems of instruction (PSI), programmed and automated instruction (ABA) to share power in the classroom (CRP)
Individual, independent, and interdependent behavioral contingencies, behavior contracts, token economies, school wide positive behavior supports, self-monitoring, self-management, and self-regulation (ABA) as tactics for high behavioral expectations (CRP)		

Note. This is a nonexhaustive list of multiple tactics and strategies derived from the behavioral literature that support the CRP framework

care, behavior analysts can start by examining their own implicit biases (Fong et al., 2016) and reflect on reasons why they may feel more “comfortable” or have a better rapport with certain groups when compared to others. They can further reflect on how that relationship may contribute to a lower quality of services. Devine et al. (2012) recommend learning about the context in which bias may be activated and then consciously replacing those biased responses with responses that reflect a practitioner's nonprejudiced goals.

Behavior analysts working in PK–12 settings should incorporate culturally relevant pedagogy into aspects of their work as well (Behavior Analyst Certification Board, 2020b). They should avoid cookie-cutter approaches; instead, they should prioritize the values of students and schools in informing their practice (Zarcone et al., 2019). As Fong et al. (2016) advised, “a blend of both self-awareness and reliance on scientific knowledge is likely to produce the most culturally aware assessment and intervention” (p. 87). The authors of this article, who are Black and Hispanic, suggest that ABA places a

greater emphasis on cultural humility and cultural competency as well as a more conscious understanding of how the differences in race, the language of origin, culture, and socioeconomic status can inform practice as it relates to social significance, consent, assent, acceptability of specific strategies, interventions, and the effectiveness of treatment approaches within and across groups (Wright, 2019; Zarcone et al., 2019).

The field of education is changing in ways that demand that practitioners and researchers address the concerns of marginalized students. As a growing profession, behavior analysts must be dedicated to expanding their professional repertoires to include cultural competence and cultural humility in their work with schools (Connors et al., 2019; Fong et al., 2016; Fontenot et al., 2019; Wright, 2019). CRP may contribute not only to an increased understanding of bias and race, but to practical steps that behavior analysts can take to view the rich diversity of students as an opportunity to improve their practice and expand their reach.

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Declarations

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References

- Addison, L. R., Piazza, C. C., Patel, M. R., Bachmeyer, M. H., Rivas, K. M., Milnes, S. M., & Oddo, J. (2012). A comparison of sensory integrative and behavioral therapies as treatment for pediatric feeding disorders. *Journal of Applied Behavior Analysis, 45*, 455–471. <https://doi.org/10.1901/jaba.2012.45-455>
- Austin, J. L., Groves, E. A., Reynish, L. C., & Francis, L. L. (2015). Validating trial-based functional analyses in mainstream primary school classrooms. *Journal of Applied Behavior Analysis, 48*(2), 274–288. <https://doi.org/10.1002/jaba.208>
- Baer, D. M., Wolf, M. M., & Risley, T. R. (1968). Some current dimensions of applied behavior analysis. *Journal of Applied Behavior Analysis, 1*, 91–97. <https://doi.org/10.1901/jaba.1968.1-91>
- Bates, L. A., & Glick, J. E. (2013). Does it matter if teachers and schools match the student? Racial and ethnic disparities in problem behaviors. *Social Science Research, 42*(5), 1180–1190. <https://doi.org/10.1016/j.ssresearch.2013.04.005>
- Beaulieu, L., & Hanley, G. P. (2014). Effects of a classwide teacher-implemented program to promote preschooler compliance. *Journal of Applied Behavior Analysis, 47*(3), 594–599. <https://doi.org/10.1002/jaba.138>
- Becker, W. C., & Gersten, R. (1982). A follow-up of Follow Through: The later effects of the Direct Instruction Model on children in fifth and sixth grades. *American Educational Research Journal, 19*(1), 75–92. <https://doi.org/10.2307/1162369>
- Behavior Analyst Certification Board. (2020a, October 2). *BACB certificant data*. <https://www.bacb.com/BACB-certificant-data>. Accessed 13 June 2021
- Behavior Analyst Certification Board. (2020b). *Ethics code for behavior analysts*.
- Bergmann, S., Kodak, T., & Harman, M. J. (2021). When do errors in reinforcer delivery affect learning? A parametric analysis of treatment integrity. *Journal of the Experimental Analysis of Behavior, 115*(2), 561–577. <https://doi.org/10.1002/jeab.670>
- Bradshaw, C. P., Waasdorp, T. E., & Leaf, P. J. (2012). Effects of school-wide positive behavioral interventions and supports on child behavior problems. *Pediatrics, 130*(5), e1136–e1145. <https://doi.org/10.1542/peds.2012-0243>
- Brodhead, M. T. (2019). Culture always matters: Some thoughts on Rosenberg and Schwartz. *Behavior Analysis in Practice, 12*(4), 826–830. <https://doi.org/10.1007/s40617-019-00351-8>
- Buckley, E. J. (2019). *The impact of positive behavior interventions and support, counseling, and mentoring on the behavior and achievement of African American males*. (Publication No. 1695) [Doctoral dissertation, University of Southern Mississippi]. <https://core.ac.uk/download/pdf/301298618.pdf>
- Carvalho, A. A. S., Mizael, T. M., & Sampaio, A. A. (2021). Racial prejudice and police stops: A systematic review of the empirical literature. *Behavior Analysis in Practice, 1*–8.
- Conners, B., Johnson, A., Duarte, J., Murriky, R., & Marks, K. (2019). Future directions of training and fieldwork in diversity issues in applied behavior analysis. *Behavior Analysis in Practice, 12*(4), 767–776. <https://doi.org/10.1007/s40617-019-00349-2>
- Contreras, A. R., & Valverde, L. A. (1994). The impact of Brown on the education of Latinos. *Journal of Negro Education, 63*(3), 470–481. <https://doi.org/10.2307/2967197>
- Crone, D. A., Hawken, L. S., & Horner, R. H. (2010). *Responding to problem behavior in schools: The behavior education program*. Guilford Press.
- Crowe, B., & Drew, C. (2021). Orange is the new asylum: Incarceration of individuals with disabilities. *Behavior Analysis in Practice, 14*(2), 387–395.
- Danielson, C. (2002). *Enhancing student achievement: A framework for school improvement*. Association for Supervision and Curriculum Development.
- DeFulio, A., & Silverman, K. (2012). The use of incentives to reinforce medication adherence. *Preventive Medicine, 55*(Suppl.), S86–S94. <https://doi.org/10.1016/j.ypmed.2012.04.017>
- Delpit, L. D. (1988). The silenced dialogue: Power and pedagogy in educating other people's children. *Harvard Educational Review, 58*(3), 280–298. <http://www.standardsinstitutes.org/sites/default/files/material/delpit1988.pdf>
- Devine, P. G., Forscher, P. S., Austin, A. J., & Cox, W. T. (2012). Long-term reduction in implicit race bias: A prejudice habit-breaking intervention. *Journal of Experimental Social Psychology, 48*(6), 1267–1278. <https://doi.org/10.1016/j.jesp.2012.06.003>
- Dixon, D. R., Vogel, T., & Tarbox, J. (2012). A brief history of functional analysis and applied behavior analysis. In J. L. Matson (Ed.), *Functional assessment for challenging behaviors* (pp. 3–24). Springer.
- Downey, D. B., & Pribesh, S. (2004). When race matters: Teachers' evaluations of students' classroom behavior. *Sociology of Education, 77*(4), 267–282. <https://www.jstor.org/stable/3649390>
- Engelmann, S. (1999). The Benefits of Direct Instruction: Affirmative Action for At-Risk Students. *Educational Leadership, 57*, 77–79
- Engelmann, S., & Carnine, D. (1982). *Theory of instruction: Principles and applications*. Irvington Publishers.
- Erath, T. G., DiGennaro Reed, F. D., & Blackman, A. L. (2021). Training human service staff to implement behavioral skills training using a video-based intervention. *Journal of Applied Behavior Analysis, 54*(3), 1251–1264. <https://doi.org/10.1002/jaba.827>
- Evans-Campbell, T., Walters, K. L., Pearson, C. R., & Campbell, C. D. (2012). Indian boarding school experience, substance use, and mental health among urban two-spirit American Indian/Alaska Natives. *American Journal of Drug & Alcohol Abuse, 38*(5), 421–427. <https://doi.org/10.3109/00952990.2012.701358>
- Fabelo, T., Thompson, M. D., Plotkin, M., Carmichael, D., March-Banks, M. P., & Booth, E. A. (2011). *Breaking schools' rules: A statewide study of how school discipline relates to students' success and juvenile justice involvement*. Council of State Governments Justice Center. https://knowledgecenter.csg.org/kc/system/files/Breaking_School_Rules.pdf. Accessed 13 June 2021
- Farkas, G., Grobe, R. P., Sheehan, D., & Shuan, Y. (1990). Cultural resources and school success: Gender, ethnicity, and poverty groups within an urban school district. *American Sociological Review, 55*(1), 127–142. <https://doi.org/10.2307/2095708>
- Fong, E. H., Catagnus, R. M., Brodhead, M. T., Quigley, S., & Field, S. (2016). Developing the cultural awareness skills of behavior analysts. *Behavior Analysis in Practice, 9*(1), 84–94. <https://doi.org/10.1007/s40617-016-0111-6>
- Fontenot, B., Uwayo, M., Avendano, S. M., & Ross, D. (2019). A descriptive analysis of applied behavior analysis research with

- economically disadvantaged children. *Behavior Analysis in Practice*, 12, 782–794. <https://doi.org/10.1007/s40617-019-00389-8>
- Galbraith, L. A., & Normand, M. P. (2017). Step it up! Using the good behavior game to increase physical activity with elementary school students at recess. *Journal of Applied Behavior Analysis*, 50(4), 856–860. <https://doi.org/10.1002/jaba.402>
- Gilliam, W. S., Maupin, A. N., Reyes, C. R., Accavitti, M., & Shic, F. (2016). *Do early educators' implicit biases regarding sex and race relate to behavior expectations and recommendations of preschool expulsions and suspensions?* Yale University Child Study Center. https://medicine.yale.edu/childstudy/zipglar/publications/Preschool%20Implicit%20Bias%20Policy%20Brief_final_9_26_276766_5379_v1.pdf. Accessed 13 June 2021
- Good III, R. H., Powell-Smith, K. A., Abbott, M., Dewey, E. N., Warnock, A. N., & VanLoo, D. (2019). Examining the association between DIBELS Next® and the SBAC ELA achievement standard. *Contemporary School Psychology*, 23(3), 258–269. <https://doi.org/10.1007/s40688-018-0190-1>
- Gorski, P. (2016). Rethinking the role of “culture” in educational equity: From cultural competence to equity literacy. *Multicultural Perspectives*, 18(4), 221–226. <https://doi.org/10.1080/15210960.2016.1228344>
- Green, L., & Freed, D. E. (1993). The substitutability of reinforcers. *Journal of the Experimental Analysis of Behavior*, 60(1), 141–158. <https://doi.org/10.1901/jeab.1993.60-141>
- Greenwood, C. R., Delaquadri, J. C., & Hall, R. V. (1989). Longitudinal effects of classwide peer tutoring. *Journal of Educational Psychology*, 81(3), 371–383. <https://doi.org/10.1037/0022-0663.81.3.371>
- Greer, R. D. (2002). *Designing teaching strategies: An applied behavior analysis systems approach*. Educational Psychology Series. Academic Press.
- Greer, R. D., Keohane, D. D., & Healy, O. (2002). Quality and comprehensive applications of behavior analysis to schooling. *The Behavior Analyst Today*, 3(2), 120–132. <https://doi.org/10.1037/h0099977>
- Harsin, J. D., Gelino, B. W., Strickland, J. C., Johnson, M. W., Berry, M. S., & Reed, D. D. (2021). Behavioral economics and safe sex: Examining condom use decisions from a reinforcer pathology framework. *Journal of the experimental analysis of behavior*, 116(2), 149–165. <https://doi.org/10.1002/jeab.706>
- Hart, B., & Risley, T. R. (1974). Using preschool materials to modify the language of disadvantaged children. *Journal of Applied Behavior Analysis*, 7, 243–256. <https://doi.org/10.1901/jaba.1974.7-243>
- Hart, B., & Risley, T. R. (1975). Incidental teaching of language in the preschool. *Journal of Applied Behavior Analysis*, 8, 411–420. <https://doi.org/10.1901/jaba.1975.8-411>
- Hart, B., & Risley, T. R. (1980). In vivo language intervention: Unanticipated general effects. *Journal of Applied Behavior Analysis*, 13, 407–432. <https://doi.org/10.1901/jaba.1980.13-407>
- Hart, B., & Risley, T. R. (1995). *Meaningful differences in the everyday experience of young American children*. Paul H. Brookes.
- Hayes, S. C., Pistorello, J., & Levin, M. E. (2012). Acceptance and commitment therapy as a unified model of behavior change. *The Counseling Psychologist*, 40(7), 976–1002. <https://doi.org/10.1177/0011000012460836>
- Hofstadter-Duke, K. L., & Daly III, E. J. (2011). Improving oral reading fluency with a peer-mediated intervention. *Journal of Applied Behavior Analysis*, 44(3), 641–646. <https://doi.org/10.1901/jaba.2011.44-641>
- Horner, R. H., & Sugai, G. (2018). Future directions for positive behavior support: A commentary. *Journal of Positive Behavior Interventions*, 20(1), 19–22. <https://doi.org/10.1177/1098300717733977>
- Huffman, G. (2019). *Twisted sources: How Confederate propaganda ended up in the South's schoolbooks*. Facing South. <https://www.facingsouth.org/2019/04/twisted-sources-how-confederate-propaganda-ended-souths-schoolbooks>. Accessed 13 June 2021
- Hugh-Pennie, A. K., Park, H.-S. L., Luke, N., & Lee, G. T. (2018). Applied behavior analysis as a teaching technology. In V. C. Bryan, A. T. Musgrove, & J. R. Powers (Eds.), *Handbook of research on human development in the digital age* (pp. 330–362). IGI Publishing/IGI Global. <https://doi.org/10.4018/978-1-5225-2838-8.ch015>
- Johnson, K., & Street, E. M. (2012). From the laboratory to the field and back again: Morningside Academy's 32 years of improving students' academic performance. *The Behavior Analyst Today*, 13(1), 20–40. <https://doi.org/10.1037/h0100715>
- Jones, B. A., & Nichols, E. J. (Eds.). (2013). *Cultural competence in America's schools: Leadership, engagement and understanding*. Information Age Publishing.
- Kamps, D. M., Barbetta, P. M., Leonard, B. R., & Delaquadri, J. (1994). Classwide peer tutoring: An integration strategy to improve reading skills and promote peer interactions among students with autism and general education peers. *Journal of Applied Behavior Analysis*, 27(1), 49–61. <https://doi.org/10.1901/jaba.1994.27-49>
- Keller, F. S. (1968). Good-bye, teacher. *Journal of Applied Behavior Analysis*, 1(1), 79–89. <https://doi.org/10.1901/jaba.1968.1-79>
- Kuo, J. (1998). Excluded, segregated and forgotten: A historical view of the discrimination of Chinese Americans in public schools. *Asian Law Journal*, 5(1), 181–212. <https://doi.org/10.15779/Z385G39>
- Ladson-Billings, G. (1995a). But that's just good teaching! The case for culturally relevant pedagogy. *Theory into Practice*, 34(3), 159–165. <https://doi.org/10.1080/00405849509543675>
- Ladson-Billings, G. (1995b). Toward a theory of culturally relevant pedagogy. *American Educational Research Journal*, 32(3), 465–491. <https://doi.org/10.3102/00028312032003465>
- Ladson-Billings, G. (2001). *Crossing over to Canaan: The journey of new teachers in diverse classrooms*. Jossey-Bass.
- Ladson-Billings, G. (2008). Yes, but how do we do it? In W. Ayers, G. Ladson-Billings, G. Michie, & P. A. Noguera (Eds.), *City kids, city schools: More reports from the front row* (pp. 162–177). New Press.
- Ladson-Billings, G. (2009). *The dreamkeepers: Successful teachers of African American children*. Jossey-Bass.
- Ladson-Billings, G. (2018). The social funding of race: The role of schooling. *Peabody Journal of Education*, 93(1), 90–105. <https://doi.org/10.1080/0161956X.2017.1403182>
- Lajimodiere, D. K. (2013). American Indian females and stereotypes: Warriors, leaders, healers, feminists; not drudges, princesses, prostitutes. *Multicultural Perspectives*, 15(2), 104–109. <https://doi.org/10.1080/15210960.2013.781391>
- Levin, H., & Rouse, C. (2012, January 25). The true cost of high school dropouts. *New York Times*. <https://www.nytimes.com/2012/01/26/opinion/the-true-cost-of-high-school-dropouts.html>. Accessed 13 June 2021
- Machalicek, W., Strickland-Cohen, K., Drew, C., & Cohen-Lissman, D. (2021). Sustaining personal activism: Behavior analysts as antiracist accomplices. *Behavior Analysis in Practice*, 1–8. <https://doi.org/10.1007/s40617-021-00580-w>
- Mathur, S. K., & Rodríguez, K. A. (2021). Cultural responsiveness curriculum for behavior analysts: A meaningful step toward social justice. *Behavior Analysis in Practice*, 1–9. Accessed 7 July 2021
- McKeown, C. A., Luczynski, K. C., & Lehardy, R. K. (2021). Evaluating the generality and social acceptability of early friendship skills. *Journal of Applied Behavior Analysis*. Advance online publication. <https://doi.org/10.1002/jaba.842>
- Mervosh, S. (2019, February 27). *How much wealthier are white school districts than nonwhite ones? \$23 billion, report says*. *New York Times*. <https://www.nytimes.com/2019/02/27/education/school-districts-funding-white-minorities.htm>. Accessed 7 July 2021
- Michael, J. (1982). Distinguishing between discriminative and motivational functions of stimuli. *Journal of the Experimental Analysis of*

- Behavior*, 37(1), 149–155. <https://doi.org/10.1901/jeab.1982.37-149>
- Morrison, K. A., Robbins, H. H., & Rose, D. G. (2008). Operationalizing culturally relevant pedagogy: A synthesis of classroom-based research. *Equity & Excellence in Education*, 41(4), 433–452. <https://doi.org/10.1080/10665680802400006>
- Muñiz, J. (2019, March 28). *Culturally responsive teaching: A 50-state survey of teaching standards*. New America. <https://www.newamerica.org/education-policy/reports/culturally-responsive-teaching/>. Accessed 13 June 2021
- National Assessment of Educational Progress. (2019). NAEP report card: 2019 NAEP reading assessment. *The Nation's Report Card*. <https://www.nationsreportcard.gov/highlights/reading/2019/g12/>. Accessed 7 July 2021
- National Center for Education Statistics. (2019). *Fast facts: Back to school statistics*. https://nces.ed.gov/fastfacts/display.asp?id=372#PK12_enrollment
- Nergaard, S. K., & Couto, K. C. (2021). Effects of reinforcement and response-cost history on instructional control. *Journal of the Experimental Analysis of Behavior*, 115(3), 679–701. <https://doi.org/10.1002/jeab.680>
- Nicolson, A. C., Lazo-Pearson, J. F., & Shandy, J. (2020). ABA finding its heart during a pandemic: An exploration in social validity. *Behavior Analysis in Practice*, 13(4), 1–10. Advance online publication. <https://doi.org/10.1007/s40617-020-00517-9>
- Normand, M. P., Dallery, J., & Slanzi, C. M. (2021). Leveraging applied behavior analysis research and practice in the service of public health. *Journal of Applied Behavior Analysis*, 54(2), 457–483. <https://doi.org/10.1002/jaba.832>
- Pennypacker, H. S., Gutierrez, A., & Lindsley, O. R. (2003). *Handbook of the Standard Celeration Chart* (deluxe ed.). Cambridge Center for Behavioral Studies.
- Petts, R. A., Foster, C. S., Douleh, T. N., & Gaynor, S. T. (2016). Measuring activation in adolescent depression: Preliminary psychometric data on the Behavioral Activation for Depression Scale-Short Form. *Behavior Analysis: Research & Practice*, 16(2), 65–80. <https://doi.org/10.1037/bar0000036>
- Pritchett, M., Ala'i-Rosales, S., Cruz, A. R., & Cihon, T. M. (2021). Social justice is the spirit and aim of an applied science of human behavior: Moving from colonial to participatory research practices. *Behavior Analysis in Practice*, 1–19.
- Risley, T. R., & Hart, B. (1968). Developing correspondence between the non-verbal and verbal behavior of preschool children. *Journal of Applied Behavior Analysis*, 1, 267–281.
- Ross, S. W., Horner, R. H., & Higbee, T. (2009). Bully prevention in positive behavior support. *Journal of Applied Behavior Analysis*, 42(4), 747–759. <https://doi.org/10.1901/jaba.2009.42-747>
- Skiba, R. J., Horner, R. H., Chung, C. G., Rausch, M., May, S. L., & Tobin, T. (2011). Race is not neutral: A national investigation of African American and Latino disproportionality in school discipline. *School Psychology Review*, 40(1), 85–107. <https://doi.org/10.1080/02796015.2011.12087730>
- Skinner, B. F. (1953). Some contributions of an experimental analysis of behavior to psychology as a whole. *American Psychologist*, 8(2), 69. <https://doi.org/10.1037/h0054118>
- Stockard, J., Wood, T., Coughlin, C., & Rasplia Khoury, C. (2018). The effectiveness of direct instruction curricula: A meta-analysis of a half century of research. *Review of Educational Research*, 88, 479–507. <https://doi.org/10.3102/0034654317751919>
- Thomas, T. (2021). *Effects of school wide positive behavior interventions and supports in an African American all-boys urban school*. (Publication No. 10552). [Doctoral dissertation, Walden University].
- Thyer, B. A. (1999). Clinical behavior analysis and clinical social work: A mutually reinforcing relationship. *The Behavior Analyst*, 22(1), 17–29. <https://doi.org/10.1007/BF03391974>
- Trump, C. E., Pennington, R. C., Travers, J. C., Ringdahl, J. E., Whiteside, E. E., & Ayres, K. M. (2018). Applied behavior analysis in special education: Misconceptions and guidelines for use. *Teaching Exceptional Children*, 50, 381–393. <https://doi.org/10.1177/0040059918775020>
- Vanselow, N. R., & Hanley, G. P. (2014). An evaluation of computerized behavioral skills training to teach safety skills to young children. *Journal of Applied Behavior Analysis*, 47(1), 51–69. <https://doi.org/10.1002/jaba.105>
- White, O. R., & Haring, N. G. (1976). *Exceptional teaching: A multimedia training program*. Merrill.
- Williams, H. (2005). *Self-taught: African American education in slavery and freedom*. University of North Carolina Press http://www.jstor.org/stable/10.5149/9780807888971_williams
- Wolf, M. M. (1978). Social validity: The case for subjective measurement or how applied behavior analysis is finding its heart. *Journal of Applied Behavior Analysis*, 11(2), 203–214. <https://doi.org/10.1901/jaba.1978.11-203>
- Wright, P. I. (2019). Cultural humility in the practice of applied behavior analysis. *Behavior Analysis in Practice*, 12(4), 805–809. <https://doi.org/10.1007/s40617-019-00343-8>
- Zarcone, J., Brodhead, M., & Tarbox, J. (2019). Beyond a call to action: An introduction to the special issue on diversity and equity in the practice of behavior analysis. *Behavior Analysis in Practice*, 12(4), 741–742. <https://doi.org/10.1007/s40617-019-00390-1>