Research in Autism Spectrum Disorders 8 (2014) 633–643

Contents lists available at ScienceDirect

Research in Autism Spectrum Disorders

Journal homepage: http://ees.elsevier.com/RASD/default.asp

The Classroom Practice Inventory: Psychometric evaluation of a rating scale of intervention practices for children with autism spectrum disorder☆

Stephanie S. Reszka [a,*], Kara A. Hume [a], Laurie Sperry [b], Brian A. Boyd [a], Matthew T. McBee [c]

[a] University of North Carolina at Chapel Hill, United States
[b] Regis University, CO, United States
[c] East Tennessee State University, United States

ARTICLE INFO

Article history:
Received 2 December 2013
Received in revised form 11 February 2014
Accepted 25 February 2014
Available online 30 March 2014

Keywords:
Classroom practices
Psychometric evaluation
Eclectic
Autism
Intervention

ABSTRACT

The Classroom Practice Inventory (CPI) was developed as a tool to provide descriptive information about the practices used in classrooms to address the developmental needs of children with autism spectrum disorder (ASD). Data from a multi-site study examining the outcomes for preschool students with ASD served in three types of classroom models indicate that the CPI produces reliable and valid assessments of practices used in classrooms. Items on the CPI can be used to discriminate among classroom models and can be used to provide descriptive information about classrooms following a prescribed comprehensive treatment model as well as those providing an eclectic model of services. Implications for the future use of the CPI are discussed.

Many young children with autism spectrum disorder (ASD) are served in preschool programs and teachers in these programs report using a variety of educational strategies and intervention practices (Hess, Morrier, Heflin, & Ivey, 2008; Stahmer, Collings, & Palinkas, 2005). Some programs adhere to a specific comprehensive treatment model (CTM; e.g., TEACCH Autism Program, Learning Experiences and Alternative Program for Preschoolers and their Parents, LEAP, see Odom, Boyd, Hall, & Hume, 2010 for additional examples) designed to address the broad developmental needs of children with ASD. Other programs that use a more "eclectic" model of services, combining intervention practices from many models or resources rather than following a specific intervention framework (Howard, Sparkman, Cohen, Green, & Stanislaw, 2005). The unique characteristics and needs of children with ASD often necessitate the individualization of educational settings and services to address the varying developmental needs of children with this diagnosis (Iovannone, Dunlap, Huber, & Kincaid, 2003; Stahmer et al., 2005b). Recently, researchers (i.e., Odom, Hume, Boyd, & Stabel, 2012; Stahmer, Schreibman, & Cunningham, 2010) have suggested that combining treatment approaches to support this individualization may be the most effective approach to address the varied needs and characteristics of students with ASD.

There has been, however, little research about these combined treatment approaches, often termed "eclectic," "business as usual (BAU)," or "non-model specific" to date (Howard et al., 2005). An eclectic approach has not been clearly

☆ The opinions expressed represent those of the authors and do not represent views of the Institute or the U.S. Department of Education.

* Corresponding author at: 321 S. Columbia Street, UNC-CH Allied Health Sciences, Bondurant Hall CB #7122, Chapel Hill, NC 27599-7122, United States. Tel.: +1 919 843 7384.
E-mail address: stephanie.reszka@unc.edu (S.S. Reszka).

http://dx.doi.org/10.1016/j.rasd.2014.02.003
1750-9467/

defined in practice or in research (Dillenburger, 2011; Odom et al., 2012), but has been used frequently as a contrast to comprehensive treatment model programs. The few existing studies addressing these models have shown conflicting evidence about effectiveness of eclectic models with some studies finding that children in eclectic models did not make developmental gains as quickly as those in intensive behavior treatment (IBT) models despite similar dosage and intensity (Eikeseth, Smith, Jahr, & Eldevik, 2002; Howard et al., 2005). In contrast, recently Boyd et al. (2014) compared the effects of two comprehensive treatment models (TEACCH and LEAP) and non-model specific (or eclectic) classrooms on various developmental and behavioral outcomes for young children with ASD (Boyd et al., 2014). Results indicated that children in all three types of programs made significant and similar gains: However, there were no differential gains across classroom types. This study indicated that high-quality eclectic models, when carefully defined and selected, can be efficacious for this population.

While individualization of programs and practices is likely beneficial for young children, it presents challenges for researchers studying the efficacy of such programs, because operationally defining and accurately capturing the types of practices used, and with which student, is difficult (Odom, Boyd, Hall, & Hume, in press). Supplemental educational practices may be specified by the comprehensive treatment model (e.g., the use of visual supports within the TEACCH program), but even classrooms adhering to one model may adapt other methods and strategies as needed to address the developmental needs of children with ASD (Boyd et al., 2014). There is often overlap between practices used as part of a broader intervention program or model and those used in eclectic settings (Odom et al., 2012). Additionally, many practices are commonly combined: for example using both discrete trial strategies and naturalistic interventions (Fava et al., 2011). If practice components used in classrooms are not measured or reported, it can be difficult to draw conclusions about the effectiveness of these approaches because practices may be mixed and combined on top of stated intervention models. Furthermore, it can be difficult to draw conclusions about the effectiveness of eclectic models versus comprehensive treatment models when the exact practices used within each are not described or measured (Durlak & DuPre, 2008; Reichow, Barton, Boyd, & Hume, 2012). While fidelity or implementation measures are critical to gather data on the intervention being implemented, such measures may not capture what else is happening in the classroom outside the scope of that intervention. Researchers may need an additional way to describe ongoing, complementary classroom practices (e.g., those in place in eclectic classrooms or those used in classrooms using CTMs), and one starting place is to have teachers self-identify the specific educational practices being implemented.

The comprehensive treatment models study team developed the Classroom Practice Inventory (CPI; TEACCH/LEAP project team, 2007) for use in their study of CTMs and non-model specific classrooms to help provide further descriptions of practices used in study classrooms. This tool was and can be used to gather information about practices used in classrooms and to describe and define eclectic classrooms. While a number of questionnaires have been used to gather classroom practice information (e.g., Hume, Bellini, & Pratt, 2005; Hess et al., 2008), no existing measure of classroom practices is psychometrically validated as is recommended (Hume et al., 2011), and no measure, to our knowledge, has been used in the context of a study examining the efficacy of school-based classroom practices.

The purpose of this study was to analyze the reliability and validity of a classroom practices measure, the CPI. The measure was used in an examination of the relative efficacy of two CTMs (i.e., TEACCH and LEAP) and non-model-specific (or eclectic) classrooms, and has future utility in similar treatment research. The measure development is consistent with current calls in the literature to better define and describe the eclectic condition often used in treatment efficacy studies (Reichow et al., 2012; Smith et al., 2007). Potentially, such data can be used to better understand both mediators and moderators of implementation in treatment research.

1. Research questions

The specific research questions are (1) does the CPI measure produce reliable scores as judged by the assessment of internal consistency, test–retest reliability, and inter-rater agreement? and (2) does the CPI produce valid scores as judged by its ability to discriminate between classrooms employing CTMs and eclectic practices?

2. Method

Three primary steps were completed in the development and psychometric validation of the CPI. Though the CPI was used to gather data related to supplemental classroom practices rather than fidelity data, these three steps mirror the recommendations of researchers designing fidelity of implementation measures for use in intervention studies, and mirror the steps the larger project also followed to develop its fidelity measures (described in Hume et al., 2011; Mowbrey, Holter, Teague, & Bybee, 2003). The first step is to design the measure based on expert consensus and explicit description as well as developing indicators that assist in anchoring points on rating scales (Mowbrey et al., 2003). This step is described in Section 2.1. The second step is to collect data to measure the indicators. This step, which includes self-report by classroom teachers at the beginning and end of the school year, is described in Section 2.2.1. The third step is to examine the indicators in terms of their reliability as well as validity (Moncher & Prinz, 1991). This final step is addressed in Sections 2.3 and 3.