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Abstract

The COVID pandemic has exposed the many glaring difficulties inherent in implementing effective assessment and intervention for young children with neurodevelopmental delays and disabilities in our respective countries, but, especially in the US. The urgency for innovative models of assessment linked to interdisciplinary services and supports in both remote and in-vivo settings became prominent. Yet, the commitment to *developmentally appropriate practice* (DAP), assessment linked to intervention, is the hallmark of Early Childhood Intervention (ECI), whether virtual or in-vivo. Interdisciplinary professionals have rallied during these challenging times by displaying creativity, compassion, and superb clinical judgment in providing responsive services via both virtual and in-vivo platforms to families and young children with special needs in rural and urban regions. Virtual service delivery has required judicious changes in our professional practices using more responsive and less scripted postures. Our family-centered approaches enabled us to engage with parents as partners in assessment and intervention and to plan and deliver supports that were more tailored.

We believe that our "lessons learned" from the COVID pandemic about implementing *authentic assessment for early childhood intervention* (AA for ECI) among parents and interdisciplinary professionals will make our ongoing partnerships with families and other professionals stronger and more enduring. We hope that this article and the step-by-step model that we have

offered will help you in your own professional lives to maintain the outlook that emphasizes the importance of both authentic assessment methods & processes, whether in-vivo or virtual, for undercovering each child's hidden and true capabilities and needs, and to adhere to our enduring commitment to protect children's inherent civil and human rights.

Keywords: *authentic, assessment, best practices, virtual, remote, early childhood intervention Authentic Assessment for Early Childhood Intervention: In-Vivo & Virtual Practices for Interdisciplinary Professionals*

Early Childhood Intervention & "Best Practices"

The field of early childhood intervention (ECI) focuses on the strengths and needs of families and all our youngest children (Birth to 8 years of age) in early childhood settings, but especially those who are at developmental risk or with neurodevelopmental delays/disabilities. ECI is a field which is grounded upon evidence gathered during the implementation of individualized instruction, interventions, and supports in diverse real-world settings and routines. The practice-based evidence of ECI has documented the ongoing quality, effectiveness, inclusion, impact, and applied outcomes of diverse types of interventions to meet the needs of all young children (Shonkoff & Meisels, 2004).

The field of ECI has demonstrated its commitment to strong professional practice standards and applied use of creative and effective service delivery models by interdisciplinary professionals that meet the individual needs of families and young children (Shonkoff & Meisels, 2004). For example, The National Association for the Education of Young Children (NAEYC) certifies ECI programs in the United States (U.S.) based upon their adherence to the rigorous NAEYC practice standards of developmentally appropriate practice (NAEYC, 2020). Moreover, regarding creative service delivery models, both the transdisciplinary model and the Pyramid Model (Hemmeter, Snyder, Fox, Algina, 2016) for serving children in preschool classrooms and homes were first designed out of necessity to engage parents

as partners in both assessment and intervention activities; both models became widely spread as "best practice" in ECI years before effectiveness studies were done in field settings (Bagnato, 2007).

The major ECI professional organizations (e.g., National Association for the Education of Young Children [NAEYC]; the Division for Early Childhood of the Council for Exceptional Children [DEC]; and Zero-to-Three [ZTT]), with a membership of over 150,000 professionals and parents, maintain the quest for quality and effectiveness through the promotion of professional competencies or recommended practices which operationalize the concept of developmentally-appropriate practices (DEC, 2014; NAEYC, 2020; ZTT, 2020).

A "guild" is usually held to mean a trade organization of craftsman or artisans such as in medieval times. Guild is used here to refer to "an association of people with similar interests or pursuits; they facilitate negotiations between their own members and these negotiations can be used to set standards for. . . best practices, quality, safety requirements, standard rates, and professional certification" (Webster, 2020, p. 176). Interdisciplinary professionals who enter the ECI field are mentored to join the "guild" and to adhere to and apply the DAP professional standards over their own disciplinary practices given the uniqueness of the ECI field over traditional practices that are more closely aligned with medicine and psychology. ECI embraces several overarching concepts and aligned practices: developmentally appropriate; familycentered; authentic; culturally sensitive; individualized; inclusive; collaborative; team-based; functional; and ecological.

Authentic Assessment for ECI

Authentic Assessment is one of the fundamental activities of DAP; it is used by all disciplinary professionals. However, it is important to emphasize that the overarching purpose for Authentic Assessment for ECI is linking assessment to early childhood intervention. Moreover, assessment in ECI accomplishes several important and interrelated purposes, and must be conducted to fulfill these purposes: screening;

eligibility; individualized programming; performance-progress monitoring; program evaluation; and accountability. Authentic Assessment is regarded as "best practice" by all the major ECI professional organizations and has a rich evidence-base for applied use in the ECI field for young children with special needs (Bagnato, 1994, 2007; Bagnato & Pretti-Frontczak, 2010; Bagnato et al., 2014; Bagnato et al., 2011; Lee et al., 2015).

The Pandemic & Authentic Assessment

The COVID pandemic has created urgency for innovative models of assessment linked to interdisciplinary services and supports in both remote and in-vivo settings. However, the commitment to developmentally appropriate practice (DAP) is the hallmark of ECI, whether virtual or in-vivo. Practice-based evidence for virtual assessment linked to intervention is in its earliest stages; the creativity of interdisciplinary and international professionals and organizations working daily with children and families and in remote collaboration with other professionals via telehealth is vital for advancement in this area of research and practice. In international and interdisciplinary research, applied topics generally relate assessment to intervention using remote means: family perspectives on telehealth services (Camden & Silva, 2021); family support for children with Autism Spectrum Disorder during lockdown (Degli, Espinosa et al., 2020); monitoring learning progress during the COVID pandemic (American Psychological Association [APA], 2020); concrete authentic observations to monitor progress in ECI (Minnesota Department of Education, 2020); remote screening, eligibility assessment, and evaluation during COVID (Early Childhood Technical Assistance Center [ECTA], 2021); revisiting authentic assessment due to IQ test restrictions (Watkins, 2020); and virtual supports to engage parents and young children during COVID and beyond (Ramos et al., 2021).

The LINK Forum on "Best Practices" for Authentic Assessment in Early Childhood Intervention

The LINK International & Interdisciplinary Forum on Authentic Assessment for Early Childhood Intervention was conducted through a series of virtual focus groups and consensus decision-making during the pandemic in 2021-2022. This new strategy for conducting a more robust national/international consumer social validity study gathered practice-based evidence from the field using national and international expert panel focus groups and an expert panel forum to survey Authentic Assessment experts and users.

The central organizing feature of the Forum was the use of seven disciplinary focus groups with membership selected by a disciplinary chairperson and the authors consisting of the following interdisciplinary professional groups: Early Childhood Educators/ Early Interventionists/Early Childhood Special Educators, Speech/ Language Specialists, Physical Therapists; Occupational Therapists, Psychologists, University Faculty Representatives, and International Experts. We recruited a national and international representative sample of interdisciplinary participants (n=120) from the U.S., Canada, Australia, Turkey, Italy, Spain, Portugal, Ireland, Holland, China, Korea, Taiwan, and Uzbekistan, for two major LINK activities: (1) the LINK Expert Panel Focus Groups (n=7); and (2) a cross-disciplinary LINK Expert Panel Forum.

The process and outcome data on the LINK Forum regarding virtual and in-vivo assessment were presented as a symposium at the International Society for Early Intervention (ISEI) Conference in Chicago, Illinois in September 2022 (Bagnato, 2022). Moreover, our research team published a refereed research article in this issue of Perspectives for Early Childhood Psychology & Education, The LINK International & Interdisciplinary Forum on Authentic Assessment for Early Childhood Intervention (Bagnato et al., 2023).

Based upon the LINK Forum's interdisciplinary and international consensus, as well as our own field-based applied research regarding authentic assessment for early childhood intervention in-vivo and

virtual (Bagnato, 1994, 2007; Bagnato & Pretti-Frontczak, 2010; Bagnato et al., 2014; Bagnato et al., 2011; Lee et al., 2015), we offer a step-by-step model for authentic assessment which supports DAP quality standards for both in-vivo and virtual practices. Standards are proposed for natural environments; observational methods; familycentered practices; interdisciplinary teamwork; and the essential linkage between assessment and intervention.

LINK Forum Research Consensus Outcomes

The following overarching results of the LINK Forum research detailed in Bagnato et al., (2023) are highlighted next and will be infused into our proposed step-by-step process and guide for "authentic assessment in action" as the basis for the current article on in-vivo and virtual assessments.

- Assess only in children's natural environments using multiple methods, and in collaboration among familiar and knowledgeable parents and professionals.
- Champion the regular use of virtual computer platforms, such as Zoom and Microsoft Teams, as integral dynamics for both in-vivo and virtual assessments with the child in the natural environment, as well as in virtual observational assessments of the child in home, preschool, and community settings.
- Ensure that evidence of children's functional competencies with adults and peers in multiple environments are collected using video clips via iPad and cell phones to validate the data collected from instruments.
- Focus primarily on individualized goal-planning as the primary purpose of assessment for early childhood intervention.
- Use transdisciplinary teamwork models which best fit the style and developmental principles of early childhood and exemplify equitable parent-professional relationships.
- Gather observational data on functional developmental skills to ensure the best linkage between assessment and intervention goal-planning.

- Deemphasize traditional scripted testing procedures in ECI.
- Emphasize assessment which captures real-life status and progress across settings.
- Expand the use of clinical judgment and informed opinion processes as part of all assessments with young children.
- Follow NAEYC and DEC standards as the most relevant for guiding best practices in
- ECI, especially assessment.
- Collect observational data on activities and participation, aligned with ecological or environmental modifications for individuals with disabilities as pertains to the WHO/ICF systems for global use.

Phases for In-Vivo & Virtual Authentic Assessment for Early Childhood Intervention

Assessment to accomplish the critical purposes of early childhood intervention differs fundamentally from testing—the most common form of measurement for many professionals, but especially, for psychologists. Most importantly, assessment for early childhood intervention is a collaborative and interpersonal team process shared among parents and professionals. It is authentic in collecting information in real-life settings and daily routines and activities, using structured observation of children's interactions with toys and people as the main method of collecting information on typical functioning. Assessment for early childhood intervention eschews the scripted "testing" methods common to the use of intelligence and traditional developmental tests which have no evidence base for use with infants, toddlers, and preschoolers with delays/disabilities (Bagnato & Pretti-Frontczak, 2010).

Due to their recognized usefulness in intervention, 'authentic' assessments are preferred over conventional, standardized measures that quantify the child's development and disorders (UNESCO, 2021). We agree with Watkins (2020) that "if the goal is for learners with disabilities to be educated and to function in inclusive and least

restrictive learning environments and with high quality instructional resources, the increased use of authentic assessments will bring it about" (p. 2).

As reported by Steed and Leech (2021), a challenge for early educators during the pandemic was the completion of assessments and evaluations since teachers could not track children's skills and progress in-person. A recent research study (McKenna et al., 2021) reports that only 8% of 788 early childhood educators surveyed reported administering an assessment or universal screener during remote learning. Yet, 641 early childhood educators reported that they monitored and assessed children's response to remote learning via alternative means. The majority (87%) of early childhood educators used pictures and videos sent by the families. The following phases or steps in the process of authentic assessment can be used by interdisciplinary professionals to ensure the most representative and intervention-based appraisals of the capabilities and needs of young children who are at developmental risk and with neurodevelopmental disabilities.

Regarding assessment in early childhood, most guidance or research focuses upon the methods of assessment—those scales, tests, and instruments which enable the recording of children's apparent performances. While critically important, the methods of assessment are only as good as the process of assessment -- those interpersonal practices which are used to engage parents and professionals, to collect multi-source data, and to reach decisions about the child's capabilities and needs.

Table 1 offers an overarching rubric for professionals to conceptualize the why, what, how, who, when, and where for "orchestrating" assessment processes which are authentic, collaborative, and intervention-based and can be accomplished through both in-vivo and virtual platforms. These assessment processes ensure that assessment methods are truly authentic, whether in-vivo or virtual.

It should be noted that "why" refers to planning individualized interventions -- the primary and justifiable purpose for assessment in early childhood intervention. To accomplish this objective, assessment process and content must focus on functional skills and competencies (e.g., activity, participation, environmental supports) that are developmentally appropriate and align with curricular goals and early learning standards. The type of assessments selected must emphasize functional competencies and enable teamwork in which professionals and parents collaborate to gather information through observation and play about children's capabilities in diverse home, preschool and community routines. The Italians refer to this collaborative aspect of assessment as *valutare insieme*, meaning a humanistic process of finding and identifying value and worth together. Also note that the "when" of assessment is serial -- across time, occasions, people, and places. The "where" of the rubric underscores that assessment occurs through observations in natural environments and uses natural tactics (e.g., play, prompted interactions, videos and virtual snapshots of different daily routines).

Table 1
Rubric for conceptualizing authentic assessment "in action"

Feature	Definition	Implication
Why?	Rationale & purposes to implement assessment	Implication
What?	Content of the authentic assessment	Individualized intervention
How?	Method or format for authentic assessment	Observation & judgment
Who?	Parent-professional collaboration	Teamwork models
When?	Timing & occasions of assessments	Serial performance & progress
Where?	Contexts for assessment	Natural environments & play

Steps in In-Vivo & Virtual Authentic Assessment for Early Childhood Intervention

The following steps are explained in greater detail with examples and supporting research references in the narrative. In addition, Table 2 provides a handy "at-a-glance" summary, exemplars of specific "to-do" actions, and guidance for team members to implement authentic assessment in both virtual and in-vivo circumstances.

Step 1: Use technology as the basis and integral feature for all assessments of children's competencies (e.g., Zoom, Microsoft Teams, cell-phone videos, iPad videos).

The use of iPads in early childhood classrooms and home routines has exploded. It is common to use evidence via cell-phone videos by parents, caregivers, and teachers in diverse settings and interactions with adults and peers to more accurately plan individual goals and intervention strategies that work. The use of Zoom, and the recording and archiving of video evidence, will prove to revolutionize ECI programs and their impact and outcomes. We now can truly probe the "developmental ecology" of each child and their social supports to improve our understanding of what works in ECI. Children can be observed in person or via the use of technologies that capture their skills.

Authentic assessment using virtual formats can be arranged with the child's family and familiar caregivers (ECTA, 2021). Consent and ethical considerations when using videos will involve program-level decisions, with policies in place to protect the privacy of children and their families.

Video portfolios can aid in documenting the child's skills and interpreting changes over time. Archival footage shows skills that the child has mastered, that are emerging, or that the child is not yet ready for, when analyzing each video clip in different time periods.

Technology can be used for the assessment of children's competencies (Hutlinger & Johanson, 2000; McConnell et al., 2002; United Nations Children's Fund [UNICEF], 2020). Technologies in

the form of video communication tools have advantages and disadvantages over face-to-face assessment. One advantage is efficiency. Using technology can alleviate the need for travel time and expenses to and from the assessment site (APA, 2020). This reduction of time and expense could lead to greater willingness on the part of the parent to participate in the assessment and allow the assessor to perform more assessments in the same amount of time. Another advantage is capturing the assessor's point of view. If, for example, a Zoom session is recorded, another observer could review the assessment with the same point of view as the original assessor. If that same assessment were performed face-to-face and recorded, the observer after the fact would have a similar, but not identical point of view, which could influence how the second person interprets the same assessment. As reported by Camden and Silva (2021), "Uniqueness of each family is a key principle of family-centered care that applies equally to a family's preferences for technology" (p.7). Obviously, it is important to increase access through financial supports and wifi systems for these technologies for early childhood practitioners (Szente, 2020).

Step 2: Reframe the assessor's role as "orchestrator" of authentic assessment processes via others.

The overarching feature of authentic assessment for early childhood intervention is that professionals, such as psychologists, must fundamentally reframe their primary role, not as an individual assessor, but rather an "orchestrator of the process" of collecting information by others to gather representative and real-life information on children's individual strengths, limitations, and needs as well as both typical and optimal functional capabilities. In this way, authentic assessment links to intervention and sets the stage for planning individualized curricular goals, using developmentally appropriate teaching strategies, and incorporating a family-centered approach. Adapting coaching activities from a classroom or home to an online environment could be a challenge. This role of

"orchestrator" requires professionals to master virtual coaching skills (Lloyd et al., 2021).

Step 3: Choose a teamwork model with parents that fits the child's needs & family cultural preferences.

Selecting the right test to use is not the most important activity. Rather, selecting a model of and process for teamwork which is acceptable to parents is the most important first step in the process of authentic assessment. This step ensures that the interdisciplinary professionals are gathering the most accurate and representative portrayal of each child's capabilities and needs. The two most common teamwork models in the early childhood intervention field are interdisciplinary and transdisciplinary teams. The choice of the most appropriate and individualized process requires partnering with parents to identify the approach which best "fits" their child. Transdisciplinary models rely upon having a primary assessor to engage in a quadrad with the mother-teacher-assessor and child to observe and prompt interactions in typical classroom and home settings and routines, using the child's own toys as well as toys selected for their characteristics of blending developmental skills across domains—communication, problemsolving, and social skills. Interdisciplinary models enable two or more professionals to divide the assessment duties based on functional domains or settings in which the observations are conducted, and the data are gathered. Also vital are sensitivity to parent's cultural preferences in how the assessment is accomplished and fits the family's customs, and the involvement of one or both parents.

Virtual service allows for multiple adaptations to better meet the specific needs and preferences of families (Ramos et al., 2021). The transition to telehealth services could have an unanticipated advantage of accelerating personalized healthcare with better differentiated care and more individualized services (Pritchard et al., 2020). Virtual service can provide greater flexibility in designing and delivering the intervention program to reflect the individual

needs of the child and family (Ashburner et al., 2016). This approach emphasizes the importance of observational skills and the fact that using videos and photos in a telehealth approach provides a window into the child's natural environment.

For example, such individualization is clearly established in the Principles Framework for Implementing Telehealth in Pediatrics (VIRTUAL) proposed by Camden and Silva (2021). VIRTUAL stands for Viewing (What can I observe?); Information (What information does the family need?); Relationships (How can I build relationship and become a coach to the family?); Technology (Am I ready and correctly using the technology?): Unique (What are this family's needs and context?); Access (How can I ensure telehealth services are accessible to all?); and Legal (Did I consider all legal and organizational aspects?").

Step 4: Select a developmental profile to record functional competencies that link to curricular goals.

Structured measures of developmental capabilities are vital to the authentic assessment process; the best measures for best practices are those which contain sequenced and graduated skills within and across the 6 major domains and encompass functional goals which are the centerpiece of common developmental curricula used in early childhood classrooms. Assessment informs the child's learning goals and objectives. Instructional targets should link to the early childhood curriculum (Bagnato et al., 2011). A developmental profile allows the recording of functional competencies that link to curricular goals and content for children; many of the revised scales have iPad assists which enable digital data collection on child capabilities.

Developmental profiles for children are helpful tools that can help interdisciplinary professionals (i.e., physical & occupational therapy, speech/language therapy, psychologists) to align assessment, goal development, instruction/curriculum, and overall evaluation of the program. For example, the team could use an authentic curriculum-

based assessment to learn about the child's skills. Then, they could create individualized goals and objectives for the child. The curriculum would be used to address the child's goals/objectives in an intentional way so that progress could be monitored over time using the authentic assessment.

Bagnato and colleagues (2010; 2014; 2023; in press; Lee et al., 2015) provide an applied evidence-base grounded in field-validation and social validity through actual use in early childhood intervention programs, to assist interdisciplinary ECI teams in their collaborative decisions to select the best measures for a particular child or for a program. These developmental profiles enable teams to observe common child capabilities in a uniform manner across diverse people and settings, both virtually and in-vivo.

For example, consider these exemplary and diverse measures to use for ECI purposes: Desired Results Developmental Profile-Access (DRDP; California Department of Education, 2006), the Pediatric Evaluation of Disability Inventory (PEDI; Haley et al., 1992), the Developmental Assessment for Severe Handicaps (DASH; Dykes & Mruzek, 2018), Assessment, Evaluation, and Programming System (AEPS-3; Bricker et al., 2022) and its companion Child Progress Record (CPR; Bricker et al., 2022), the Developmental Code sets in the International Classification of Functioning-Child & Youth Version by the World Health Organization (Ellingsen & Simeonsson, 2011), and the SPECS Functional Assessment & Classification System for Early Childhood Intervention (Bagnato, 2021). Multiple measures are required by federal law—and ethical practice—to be used for eligibility determination, as well as goalplanning and performance/progress monitoring.

Step 5: Employ "family-friendly" materials that are jargon-free & common language for all.

The choice of assessment and program planning materials for use in ECI is vital. Perhaps most important is family-friendliness. Families are consumers of assessment results that are communicated

in writing or verbally. Family members are included in the authentic assessment process as partners using a transdisciplinary model of teamwork and curriculum-based assessment methods which identify goals for program planning (Macy et al., 2019). In this teamwork model, parents complete specific observational forms to record their reports of the child's typical competencies at home and in the community. When establishing trust and rapport with families, it is critical to use a strengths-based approach. One way to create a trusting relationship with families is to use family-friendly practices that honor and respect the child and family (Bailey et al., 2006; McWilliam, 2010). These include learning about the child through the family's perceptions and experiences (Brink, 2002; Dunst et al., 1991; Guralnick, 2006). Also important are the use of common words and language to describe assessment results with families, and avoiding jargon and technical words that may not be common or familiar to parents and family members.

Parent involvement in all aspects of ECI, including assessment, requires materials that are easy-to-understand, use, and interpret, and are free of professional jargon. Real-talk is important; for example, instead of using the professional phrase "perceptual-motor integration," real-talk would be "uses eyes and hands together". Effective communication through use of digital media with photos, videos, clear descriptions, and understandable phrases is essential, and has been especially useful during the pandemic (Chen, & Rivera-Vernazza, 2020; Yi & Dixon, 2021). Parent engagement in the process is accomplished best when natural observations of play are valued, and assessment is demystified.

Step 6: Observe first children's natural competencies in play/ classroom routines.

Observation of children's routine play in classroom, home, and community settings by multiple professionals and caregivers is the primary vehicle for capturing accurate and representative appraisals or "portraits" of children's capabilities and needs. Structured

observation also utilizes iPad, cell-video, and virtual recordings of children's past and current behavior, as well as progress during intervention. These observations should pre-date any interaction of children with unfamiliar adults for purposes of assessment. In ECI, developmentally appropriate assessment requires only familiar and knowledgeable caregivers in the child's daily routines to interact with children, to optimize attachment, temperamental styles, and typical functioning. The importance of ongoing observations for early intervention for children with autism spectrum is recommended by Zwaigenbaum et al. (2015).

Naturalistic observations are the core of authentic assessment (Bagnato et al., 2014). Observing children in their familiar environments can help to understand what they can do. Children communicate through their actions and play. Places where children spend their time are the ideal locations for observations. Observational data could be collected, either virtually or invivo, during routines and play in homes, classrooms, communities, and more.

Step 7: Record cell videos of child's play to validate & archive observations of status/progress.

The use of videos of child play, status, and progress has proven crucial for archiving and understanding children's development for everyday use in early childhood intervention programs (Edelman, 2020). Edelman's (2020) ground-breaking video archive work in Colorado's early childhood intervention programs over many years has achieved fruition with the pandemic. His videos demonstrate, in fact, the fallacy of using single-session tests at tables to estimate young children's development and intelligence, an archaic and invalid methodology for young children with delays/disabilities. Edelman's (2020) video archives on virtual and in-vivo assessment in ECI can be accessed through this video link: http://www.cde.state.co.us/resultsmatter/RMVideoSeries and http://draccess.org/videolibrary/ Moreover, the pandemic has shown the essential value of using virtual observations and recordings of children in

everyday play and school/home routines. We are not going back to the old and disproven ways! Psychologists, parents, teachers, and other professionals are becoming "cinematographers" to capture real-life portraits of children's developmental status and progress as well as to more accurately identify children's unique, and often hidden talents, strengths and limitations in play, problem-solving, and interactions; such video evidence can confirm early suspected diagnoses and programmatic needs. Diagnoses based upon single-session, test-based "evidence" are developmentally-inappropriate, invalid, and unethical.

Step 8: Observe/record child capabilities across multiple settings, people, and occasions using multiple methods.

The accuracy and representativeness of authentic assessment depends upon the use of a multisource approach, the extent to which observations occur across multiple settings/routines, by multiple people, and over multiple occasions and circumstances. The orchestration of the assessment process means that this data collection will occur over a 15-30-day period to record information on current child functioning. Multi-source summative progress data is often scheduled for beginning, middle, and end of the program year. A multi-source approach encompasses, also, the use of targeted probes of children's specific functional skills in cognitive, language, social, motor, and adaptive developmental domains and subdomains.

Step 9: Partner with parents/caregivers.

There is a strong evidence base and consensus in favor of family-centered practices in early intervention (Dunst et al., 2007; Dunst & Espe-Sherwindt, 2016; Mas et al., 2016; Macy, Bagnato, & Weishaupt, 2019). Collaboration is an essential component of early intervention services (Bricker et al., 2020; Corr & Santos, 2017). The complementarity and importance of parent-professional collaborations in early intervention assessment are highlighted in Portugal's system (Jurdi et al., 2020; Suen et al., 1995). Partnerships with parents and caregivers

are a basic element of authentic assessment (Watson et al., 2006; Macy et al., 2019). Parents are honored as essential members of the team with valuable insights to share regarding their child (Wolfe & Durán, 2013). Celebrating the child's family can lead to collaborative opportunities.

Step 10: Partner with teachers/team members.

Authentic assessment for ECI purposes relies upon the partnership among parents and interdisciplinary professionals, in contributing complete information about children's functioning in diverse demands and routines.

Parents and teachers are the focal point for assessment and intervention in ECI. Collaboration with speech/language pathologists, occupational therapists, physical therapists, and early behavior specialists occur via dyads and triads in teamwork. Using virtual platforms such dyads and triads of different team members can be used to share parent interviewing, direct observation, and modelling practices with parents and other caregivers. Transdisciplinary teamwork both in-vivo and virtually makes ECI work as a unique and field-validated specialization. Attempts to use instructional and therapeutic methods designed for older children do not work and, in fact, disrupt the interdisciplinary dance or "choreography" of the ECI team.

Tiered models of support designed for ECI, such as the Pyramid Model (Hemmeter et al., 2016), are noteworthy and highly evidence-based for all children and disabilities including ASD. Partnerships with teachers and other professionals are the basis for authentic assessment (Bagnato & Pretti-Frontczak, 2010). Trust and mutual respect for one another's role and expertise can be the foundation for effective partnerships (Moreno & Klute, 2011).

Transdisciplinary practices allow each discipline to shine, and their strengths are accentuated when working together to implement authentic assessment practices (Bagnato, 2007).

Step 11: Engage in child play to probe specific skills.

Multi-source assessments of children's reading and symbolic skills in identifying words, letters, and numbers in classroom activities provide more details on both the acquisition of specific subskills, and on how much support is needed for a child to demonstrate the skill. However, these targeted assessments (often via tests or probes) can be only one small source of data—not the sole source.

Step 12: Select familiar toys/peers to prompt child play.

Children's use of their own toys in play demonstrates their typical developmental skills requiring problem-solving, imitation, social interaction, and neuromotor skills and deficits. Moreover, when the assessor then adds an unfamiliar toy to the "mix," it is instructive to observe the child's generalization of play skills learned with their own toys to the new toy to show speed and acquisition in learning new skills in object permanence, cause-effect, and means-end learning. Pairing the child with ASD (virtually and in-vivo) with a favored peer "sets-the occasion" for responding for the child with inconsistent displays of skills, both in assessment and during instruction or therapeutic intervention.

Step 13: Interview caregivers about child competencies & needs

The art of interviewing with parents has been diminished in the human service fields, including special education. Behavioral approaches are essential in our work, but interviewing styles which are natural and productive for parents and professionals are often overlooked in the urgency to collect "standardized" information. Psychologists, especially, can demonstrate their value in ECI by engaging parents in the authentic assessment process, so that the parents truly feel valued and integral to success for their children. Parents are rich sources of information about their child's capabilities and unique capacities despite children's functional limitations; these

capacities reflect "the child I know" by parents, which are often hidden in the testing process.

Step 14: Use clinical judgment & consensus team decision-making as an essential IDEAmandated assessment component.

Finally, many people do not know that revised IDEA regulations (IDEA, 2010) changed the process of assessment and evaluation in ECI in fundamental ways for all children, but particularly for infants and toddlers. Clinical judgment (CJ) or informed opinion (IO) are now mandated to be part of all testing and assessments in the field for all purposes, but especially for eligibility determination. For infants and toddlers (0-3 years of age only), CJ/IO processes involving the expert knowledge, judgments, and consensus decisions of parents and professionals must be used as part of the process to determine eligibility for early childhood intervention. An assessment system such as the SPECS: Functional Assessment & Classification System for Early Childhood Intervention (Bagnato, 2021) was designed and field-validated to structure the clinical judgment process in ECI.

CJ/IO processes are designed to enable parents and professionals to expand access to ECI services for more young children who need them. Consensus team decision-making processes should be used to reach tailored judgments about children's individualized intervention needs. As professionals, our ethical charge is to advocate for more and better services and supports for young children, not to deny access for help. No child is untestable. Tests do not make decisions; people make decisions. Everything that can be measured counts, but not everything that counts can be measured (Bagnato, 2007). As measurement experts, it is the job of psychologists and other human service professionals to ensure that unique forms of assessment are used and designed to make all relevant variables for helping children both quantifiable and qualifiable.

Table 2
At-A-Glance Summary of Authentic Assessment Processes for ECI: Virtual & In-Vivo

Authentic Assessment Process	Definition
Use technology for most assessments of children's competencies (e.g., Zoom, Teams, cellphone/iPad videos).	Zoom or Teams sessions to record and archive parent-child play routines and teacher-child-peer interactions.
Reframe professional's role as "orchestrator" of authentic assessment processes via others.	Clear written and schematic plan and timeline, to coordinate the observations and data collection among parents and professionals.
Choose a teamwork model with parents that fits the child's needs and parent cultural preferences.	Teamwork model (inter- or transdisciplinary) to engage parent and one or more professionals in assessment/intervention activities.
Teamwork model (inter- or transdisciplinary) to engage parent and one or more professionals in assessment/ intervention activities.	Selection of specific curriculumreferenced scale(s) for all team membersto record their observations.
Employ "family-friendly" materials that are jargon-free and common language for all.	Assessment forms or methods that have pictograms, photos, illustrations (3rd to 5th grade reading level) showing expected skills or use of interview methods and video illustrations.
Observe first children's natural competencies in play/classroom routines.	Observations of child actions in real-life play: communicating needs; sharing, turntaking; finding right toy at bottom of toybox, cause-effect toy play.
Record cell videos of child play to validate & archive observations of status/progress.	Regular use of iPad, cell-phone videos overtime and situations to capture real-life child functioning.

Table 2 continued

Authentic Assessment Process	Definition
Observe/record child capabilities across multiple settings, people, and occasions using multiple methods.	Plan/timeline for observing child capabilities.
Partner with parents/caregivers.	Rely on parents to contribute information on skills and capabilities not observed.
Partner with teachers/team members.	Rely on team members to provide observations and consensus evidence about child capabilities and needs.
Engage in child play to probe specific skills.	Short probes to assess child target skills and subskills-numbers, letters, problemsolving.
Select familiar toys/peers to prompt child play.	Child's own toys, favorite/most responsive peers, and novel toys for novel responses.
Interview caregivers about child competencies and needs.	Interview schedules to gather accurate parent recall and observations about child skills and needs.
Use clinical judgment & consensus team decisionmaking as an essential IDEA-mandated measurement component of all forms of testing and assessment.	Uses of The SPECS Functional Assessment & Classification System for Early Childhood Intervention (Bagnato, 2021) and the Nominal Group Technique (NGT) or Delphi Technique (DT) for CJ/IO and eligibility determination and individualized program planning by teams

Discussion & Implications

Federal Law, Authentic Assessment & Recommended Professional Practices

Both the Individuals with Disabilities Education Act (IDEA, 2010) and the Every Child Succeeds Act (ESSA; United States Department of Education [USDOE], 2015), as well as the practice standards of the major professional organizations in early childhood (NAEYC, 2020; DEC, 2014), highlight the importance of individualized assessment of young children for all purposes in Early Childhood Intervention (ECI) including eligibility determination and program planning. Individualized goal and program planning in the Individualized Family Service Plan (IFSP) and the Individual Education Program (IEP) are of critical importance for promoting child outcomes and for accountability in ECI (Bagnato et al., 2011).

An addendum to the final regulations of the ESSA under Title I, Part A and Part B (US Department of Education [USDOE], 2015) indicates that linking assessment and intervention are crucial and that "…high-quality assessments are essential for effectively educating students, measuring progress, and promoting equity. Done well and thoughtfully, they provide critical information for educators, families, the public, and students themselves and create the basis for improving outcomes for all learners" (p. 1). Moreover, the ESSA addendum (USDOE, 2015) ensures the granting to states of a "… new flexibility in ESSA to develop and pilot innovative approaches to assessments" (p. 2).

High-quality assessments refer to all forms of assessment that meet appropriate professional guidelines for technical adequacy and utility for the above purposes. Within Authentic Assessment (AA), national social validity studies and field-validation studies have been conducted on specific instruments and systems, which meet both professional standards for recommended or best practices and the technical adequacy requirement; these are summarized in Bagnato & Pretti-Frontczak, (2010). Moreover, specific AA curriculum-based

systems such as the Assessment, Evaluation, and Programming System (AEPS-3; Bricker et.al, 2022) and the Desired Results Developmental Profile (DRDP; California Department of Education, 2006) blend curriculum goals and instructional strategies with embedded assessments across 6-10 developmental domains. Both systems have conducted eligibility determination studies as well as studies measuring child progress during intervention to document intervention impact and outcomes (Bricker et al., 2022; Toland et al., D. 2022; Grisham, Jet al., 2020; Macy et al. 2019; Macy et al., 2005; California Department of Education, 2006).

Considerations In Implementation of Authentic Assessment

Both interdisciplinary professionals and their agencies must be ready to commit to changes in the process and methods of assessment to meet the "best practice" standards for ECI, as alluded to in the previously detailed steps. The role of orchestrator of the gathering of multiple sources of assessment data across people, situations, and occasions requires a different style of engagement with the programs, families, and community agencies. The role of conducting single session testing in a 45 minute to one-hour time frame does not meet the needs of children and families in ECI. Agencies and schools must enable their psychologists and other professionals to engage in a more consultative and leadership role in ECI, particularly regarding assessment and in MTSS graduated classroom services and supports.

The steps outlined above are not new in the ECI field; the social validity of the steps and associated activities were merely underscored by the interdisciplinary professionals in the LINK Forum and other research studies cited previously. However, the largest studies which used the Authentic Assessment model successfully in real-world circumstances over a three-year period was the Pre-K Counts (PKC) study (Bagnato, Salaway, & Suen, 2009) and the PEIOS Early Intervention Outcomes study (Bagnato, et. Al., 2006) across

Pennsylvania. PKC and PEIOS involved 10,003 children and parents (3-5 years of age) and 405 ECE teachers, within 130 community early childhood intervention partnership model classrooms across Pennsylvania

(2005-2009). All PKC programs were funded by the Pennsylvania Department of Education, Office of Child Development and Early Learning (OCDEL) and the Heinz Endowments and partner philanthropies. AA measures of early learning and social-emotional competencies (previously cited) were collaboratively used by teachers and interdisciplinary professionals and parents to assess all children, at three time-periods each year, over three years of engagement in high-quality early learning programs. All teachers and professionals were trained rigorously on the use of AA scales and used them to generate goals for individualized instruction and progress monitoring, and eventual kindergarten success. The success of the PKC model supported by PA businesses and corporations led to the Pennsylvania legislature passing Act 842, which provides yearly funding for young children across Pennsylvania to attend inclusive public preschools (Bagnato et al., 2009; Bagnato et al., 2006).

Closing Remarks

The COVID pandemic has exposed the many glaring difficulties inherent in the "unsystems of care" in our respective countries, especially in the US. Our serving systems are not integrated and the disjointedness between physical health and behavioral health services and, certainly, prevention and early intervention, is notable. However, interdisciplinary professionals have rallied during these difficult times by displaying creativity, compassion, and superb clinical judgment in providing responsive services to families and young children who are at developmental risk or with neurodevelopmental disabilities.

During the pandemic, interdisciplinary professionals partnered with families and fieldvalidated new approaches for both assessing the needs of young children and their families in rural and urban

regions, and providing interventions and supports virtually using Zoom, Teams and other remote platforms. Virtual service delivery has required judicious changes in our professional practices, using more responsive and less scripted and administrative postures. Our family-centered approaches enabled us to engage with parents as partners in assessment and intervention, and to plan and deliver supports that were more tailored. Authentic Assessment linked to intervention enabled professionals to use multiple sources of information to identify the strengths and needs of young children in their natural environments; we recovered our dormant skills in observation, clinical judgment, mentoring, and family engagement, and developed blended models of helping others by coupling virtual and in-vivo strategies for planning, implementing, monitoring, and evaluating the quality and impact of our services. Our services, "warts and all," have become more humanistic and understanding of the stress on families and young children. We believe that the lessons learned from the pandemic will make our ongoing partnerships with families and other professionals stronger and more enduring.

We hope that this article on the AA for ECI model based on new interdisciplinary and international research during the pandemic will help you in your own professional lives to maintain the outlook that emphasizes the importance of assessment as a process of uncovering each child's true capabilities and needs, by adhering to the following admonition about children's inherent human rights:

> **"Misrepresenting children through mismeasuring them denies children their rights to beneficial expectations and opportunities." (Bagnato & Pretti-Frontczak, 2010, p. 5.).**

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