

Analyzing the relationship between dramatic play measures and self-regulation from a cultural-historical perspective: a scoping review.

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Abstract

Play is defined as the leading activity of preschool children, it leads to cognitive, emotional and social development. In dramatic play the child moves towards an activity centered on social relations and increasingly guided by internal plans. Although a theoretical intrinsic relation between play and executive functions has been defined, it has been difficult to prove. The problem of assessment is one of the reasons. The aim of this review was to analyze if information about executive functions is included in dramatic play assessments. Thus, we surveyed studies of dramatic play in children to (a) identify the measures used and their properties, and (b) identify the extent to which the measures provide data about children's regulatory ability. 10 measures were included and analyzed using four categories considered defining of dramatic play from a cultural-historical perspective: Plans, Roles, Props and Scenarios. One measure assessed all the dimensions and two measures included three. The most attended dimensions were Roles and Props, followed by Scenarios and Plans. The results show that few assessments recover information about self-regulation. A limited cultural diversity is observed, pointing out the need to extend the research to different contexts, especially to societies with high levels of inequality.

Keywords: Dramatic Play; Play Assessment; Self-regulation; Executive Functions

Highlights

First highlight: from a cultural historical perspective, dramatic play promotes SR and could constitute an ecologically valid assessment of its development in early childhood.

Second highlight: Dramatic play has different dimensions that need to be assessed.

Third highlight: Few dramatic play assessments recover aspects linked to children's self-regulation development.

Fourth highlight: The diversity in the definitions of dramatic play is evident in the way it is measured.

Final highlight: This scoping review showed that the dimensions of dramatic play most frequently assessed are Roles, Props and Scenario, while Plans are rarely assessed.

1. Introduction

What is the relation between dramatic play and cognitive development? Numerous researchers have focused on the study of such association (Bodrova, 2008; Brėdikytė & Hakkarainen, 2017; Germeroth et al, 2019; Gonzalez Moreno et al., 2009; Gonzalez Moreno, et al., 2014; Hamamcı & Dagal, 2021; Ivanova, 2000; Manuilenko, 1975; Nicolopoulou & Ilgaz, 2013; Pellegrini & Galda, 1982; Smirnova & Gudareva, 2015), but the evidence they provide is inconclusive and subject to debate (Baron, et al, 2020; Bodrova et al., 2013; Estrugo & Moreira, 2020; Lillard et al., 2013; Nicolopoulou & Ilgaz, 2013; Veraksa, Veresov & Sukhikh, 2022). This could be explained in part because studies differing in the theoretical definition of play activity (Thompson & Goldstein, 2019) and how they assess its impact on cognitive development. This heterogeneity of theories, methodological approaches and assessment are what hinders the understanding of the role of dramatic play in children's cognitive development.

While the concept of dramatic play and its properties have been addressed before (Thompson & Goldstein, 2019), the problem of assessment has not been discussed so widely. To establish a relationship with any aspect of cognitive development, appropriate measures of dramatic play are needed. This research focuses on a specific domain of cognitive development, that of self-regulation (hence SR) and executive functions (hence EF), and analyzes from a cultural-historical perspective, the way in which dramatic play measures reflect the development of SR in early childhood. Different measures may include this to a greater or lesser extent. If measures do not include indicators of EF and SR in their items, this intrinsic relation is hard to prove.

The aim of this review was to analyze if information about EF is included in dramatic play assessments. To do that, we surveyed studies of dramatic play in children to (a) identify the measures used and their properties, and (b) identify the extent to which the measures provide data about children's regulatory ability, from a cultural-historical perspective.

1.1 Defining Dramatic Play

Play has been analyzed by many authors with different perspectives (Elkonin, 1980; Göncü & Gaskins, 2007; Parten, 1932; Piaget, 1962). In this review we refer to a specific type

of play, dramatic play, defined from a cultural-historical perspective as a complex social activity, in which an inseparable relation between three components is established: an imaginary situation, the assumption of social roles, and a set of rules that regulate the action within play (Bodrova, Germeroth & Leong, 2013; Elkonin, 1980; Nicolopoulou & Ilgaz, 2013). The imaginary situation may include the generation of representations linked to everyday life, or incorporate fantastic elements derived from the child's experience (television series, stories, etc.). Roles are defined, within the framework of the imaginary situation, by a distance from the usual forms of behavior and by the adoption of the distinctive features of the character. In this sense, it is the imaginary situation that defines the features of the role through a specific system of rules. These rules allow participants to recognize the new situation, which is different from the here-and-now.

In dramatic play, children exercise social roles and modify the meaning of objects (Vygotsky, 1978). Dramatic play helps the child to understand the social world because the main content is the adults and their systems of social relations (Elkonin, 1980; Vygotsky, 1978). Such is the importance of play in development that it has been recognized as the leading activity of children in preschool age and up to seven years (Elkonin, 1980; Hakkarainen & Bredikyte, 2010; Karpov, 2005; Singer, Golinkoff & Hirsh-Pasek, 2006; Vygotsky, 1997; Zaporozhets & Markova, 1983). The child's life is structured around this activity. As the skills acquired in play are transferred to the other activities of daily life, it leads to children's cognitive, emotional, and social development. In this sense, play, as well as imitation, operates within the zone of proximal development (ZPD): it allows the child to show actions and psychological functions in the process of structuring.

Within the cultural-historical perspective, there is an overlap in the categories used to analyze dramatic play. Elkonin (1980) pointed out four aspects of play that need to be analyzed: the main content of the activity, the presence of roles and their properties, the actions and their logic, and the rules. More recently, Leong and Bodrova (2012) proposed to analyze play according to six dimensions: Plans, Roles, Props, Extended Timeframe, Language and Scenario. Planning can be defined as children's ability to think about the play, before starting to play. It includes planning roles, actions and scenarios. Role playing refers to the child's ability to pretend to be someone else, taking on the specific characteristics associated with this new identity, such as language, actions, and emotional expressions. Props dimension refers to the objects the child uses during play and the way he/she uses them. It assesses the child's ability to use objects as if they were something else (object substitution) and to play without props, being able to use his or her imagination. Extended timeframe refers to play duration. Leong and Bodrova (2012) state that in dramatic play a progression is observed that evolves from play situations that last a few minutes to play that can last several days and can be interrupted and resumed. Language dimension refers to the language that children use during play, to develop scenarios, to characterize roles and coordinate actions. The scenario is defined as the theme and scripts to which children play, which can be stereotyped behaviors, familiar scenarios, themes of stories and tales. It contemplates the coordination that exists between the actions and scenes that children perform (Leong & Bodrova, 2012).

Hakkarainen and Bredikyte (2010) conceptualized this type of play as Narrative Play. Later on, they proposed seven categories to analyze it (Bredikyte, et. al., 2017). To these authors, it is necessary to analyze the objects that child uses in play (Play Objects), if she/he adopts a role and the degree to which he/she conforms to it (Self-position of the child), the role taken by the play partner (Play partner), the space in which play is taking place (Play Space), the degree of coordination of the actions performed by the child (Play actions) and the properties of the script (Play script/narrative). These criteria define the main content of the play, which can be centered on the objects, actions, interaction with others, or in the narrative that children create.

1.2 Ontogenetic evolution of dramatic play and its relation to executive functions

All the authors mentioned above state that play has an evolutive progression. Elkonin (1980) proposed that play progress in four levels, which are subdivided into two large groups. The first group (levels one and two) constitutes the immature forms, in which the action is centered on objects and roles are determined by them. In the second group (levels three and four), play is centered on social relations; roles are previously planned and define the rules that establish the children's ways of acting. Leong and Bodrova (2012), took the approaches of Vygotsky (1966, 1978) and Elkonin (1980) and analyze the ontogenetic evolution of dramatic play in five phases, proposing an evolution in the Plans, the Roles, the objects (Props) used in the play, the Temporal Extension, the Language and the Scenarios of play. The first phase refers to immature play, where children do not plan, do not adopt roles, but play with objects as objects, exploring them without creating scenarios. Each of these elements evolves and grows in complexity until mature play stages are reached, where a series of coordinated scenes are played that can change in response to players' desires. Scenarios are planned and are more complex, including elaborate themes; roles are multiple, and play focuses on the social relationships between them; roles are no longer dependent on objects, but children use objects "as if" they were something else, and may even simulate them; situations can last for hours or even several days (as children return to the theme of play at different opportunities); language appears as a mediator to organize action, determine the scenarios and roles, and works as an element of characterization (including the language used in books and the speech register proper to the roles).

Although there are differences, all the authors (Bredikyte & Hakkarainen, 2010; Elkonin, 1980; Leong & Bodrova, 2012; Vygotsky, 1966) agree in pointing out that in dramatic play, the child progresses to an activity centered on social relations and guided by an internal plan, leaving behind the play centered on and dominated by objects. Vygotsky conceptualizes this transition as a progressive separation between the visual field and the field of meaning (Hakkarainen & Bredykite, 2015; Hakkarainen et al., 2017; Vygotsky, 1978).

Thus, the evolution of dramatic play is linked to the development of SR, because as play progresses, the child manages to distance himself/herself from the here and now, inhibit his/her immediate impulses, and monitor and plan his/her action through language (Bodrova, Germeroth & Leong; 2013). The properties of play defined by the authors (Brandisauskiene, et al., 2017; Elkonin, 1980, Leong & Bodrova, 2012) makes it an activity where self-mastery is clearly manifested. In play, a transition takes place, in which actions become determined by ideas because thought is separated from objects. Thus, it is possible for a stick to become a horse. In this transition, the sense of action changes (Elkonin, 1980). Children move from concrete action with objects (there is a spoon, feeding with the spoon), to synthesized play action (feeding a doll with the spoon) and then to protagonized play action (feeding the doll as the mother). While before play was centered on actions with objects, later on, the focus is on social relations: playing moms (there is a social role to which several actions are attributed such as feeding, cooking, bathing the baby, going to work, shopping) as opposed to playing at feeding a doll. The social roles that children play determine the rules they must follow. That is why dramatic play provides an opportunity to practice self-regulation. In play children willingly resign immediate impulses and attractions in pursuit of rule-governed behaviors; they must inhibit their behavior in accordance with the roles they want to play and the rules defined by them (Vygotsky, 1978). The substitution of objects in this play is crucial to promote children's use of thought to guide their action (Vygotsky, 1978). When children modify the conventional meaning of an object, they differentiate the ideas that guide their play from perceptual stimuli. In this sense, Vygotsky (1978) argues that dramatic play requires children to separate symbols from objects, helping them to choose intentionally among alternative forms of action. The cognitive demands of object substitution vary according to the object used for play (Elkonin, 1980; Vygotsky, 1966). The more realistic an object is (the more it resembles what it is intended to represent), it requires less effort to distinguish between ideas and perceptions; on the contrary, when the object is less realistic, the children must make more effort to assign it a negotiated meaning with the other players. This requires players to inhibit the real characteristics of the object and to maintain that representation during play. Therefore, the use of unstructured material (unrealistic objects) favors the structuring of a complex imaginary situation, which is linked to mature levels of play (Bodrova, Germeroth & Leong, 2013).

Each of the components that characterize play (Vygotsky, 1978) can be associated with what is currently known about EE. These higher-order mental processes are associated with the resolution of complex, novel, demanding situations, where overlearned responses are inefficient, and where voluntary behavioral control is required (Akhutina & Pylaeva, 2012; Bodrova, Leong & Akhutina, 2011; Burgess, 1997; Lezak, 1982). In the field of cognitive psychology this has been addressed as EF (Nigg, 2016). Engaging in an imaginary situation, as well as exercising a role and submitting to rules, demand the implementation of processes such as inhibitory control, working memory, and cognitive flexibility (Brédikytė, 2010). The role of play on the development of inhibitory control was already highlighted in Vygotsky's approach. In play children exercises a form of shared regulation towards others because children must regulate their own behavior and, at the same time, monitor the behavior of playmates (Bodrova et al., 2013; Brédikytė & Hakkarainen, 2017; Whitebread & O'Sullivan,

2012). Play also offers an opportunity for the development of working memory and cognitive flexibility. Engaging in an imaginary situation involves operating with different meanings of the same thing in mind without being confused with reality (Carlson et al., 2014; Estrugo & Moreira, 2020). The child must retain in his mind a new representation that allows him/her to generate the plane of fiction. He/she must operate with this representation to attribute a new meaning to the objects, to define a role and the rules that each one must follow. All this allows to delimit the plane of fiction that differs from reality. It is evident that these aspects demand (and give rise to the development of) cognitive flexibility, as the child must change perspective, agree with others on the meaning of objects and rules, change roles, as well as enter and leave the fictional situation (Carlson et al., 2014).

1.3 The present Study

Although it is possible to establish a relation between play and SR (Bodrova, Leong & Akhutina, 2011; Leong & Bodrova, 2012), there are difficulties in evidencing the relation between EF and dramatic play empirically. While some authors question the causal role of play on the development of SR and EF (Lillard et al., 2013) others point out that the relation exists when play has certain properties (Bodrova et al., 2013). This leads them to differentiate immature and mature forms in the analysis of play, as it is only the mature forms that would lead to the development of SR. More recently, a systematic review (Thompson & Goldstein, 2019) that included the articles reviewed by Lillard et al. (2013) and others showed that the term "dramatic play" is used very broadly by researchers and that it remains unclear what behaviors define it. This is an obstacle to a proper understanding of the influence that dramatic play would have on child's development (Thompson & Goldstein, 2019): a quarter of the studies reviewed (57 studies, 28.6 %) classified play as dramatic or not, without analyzing the behaviors or components it includes. These controversies, which evidence the lack of agreement on the definition of play, become more complex when the appropriate instruments to assess it are considered. Thompson & Goldstein's (2019) review represents a substantive advance in that it clarifies the definitions of play but does not discuss the problem of assessment.

Therefore, based on a historical-cultural perspective, the aim of this review was to analyze if information about SR is included in dramatic play assessments. To do that, we surveyed studies of dramatic play in children to (a) identify the measures used and their properties, and (b) identify the extent to which the measures provide data about children's regulatory ability.

2. Method

2.1 Search strategy and eligibility criteria:

We conducted a scoping review following the PRISMA methodology (Page et al., 2021). In the searches, we used the terms “pretend play” or “sociodramatic play” or “dramatic play” or “fantasy play” or “make-believe play” and “play assessment” or “instrument” (see Table 1), within the databases EBSCO, Web Of Science (WOS) and SCOPUS. In order to include articles published in Spanish, the same terms in Spanish were entered in EBSCO database. The searches were carried out without year or language limitations. As a result, a total of 837 records were screened in the three databases, to which 15 reports from other sources were added. After removing duplicate records, 548 titles and abstracts were read to identify those that met the following criteria: (a) that they were only academic articles, (b) that had an English, Spanish or Portuguese translation accessible, and (c) that they systematically assess dramatic play using a play assessment.

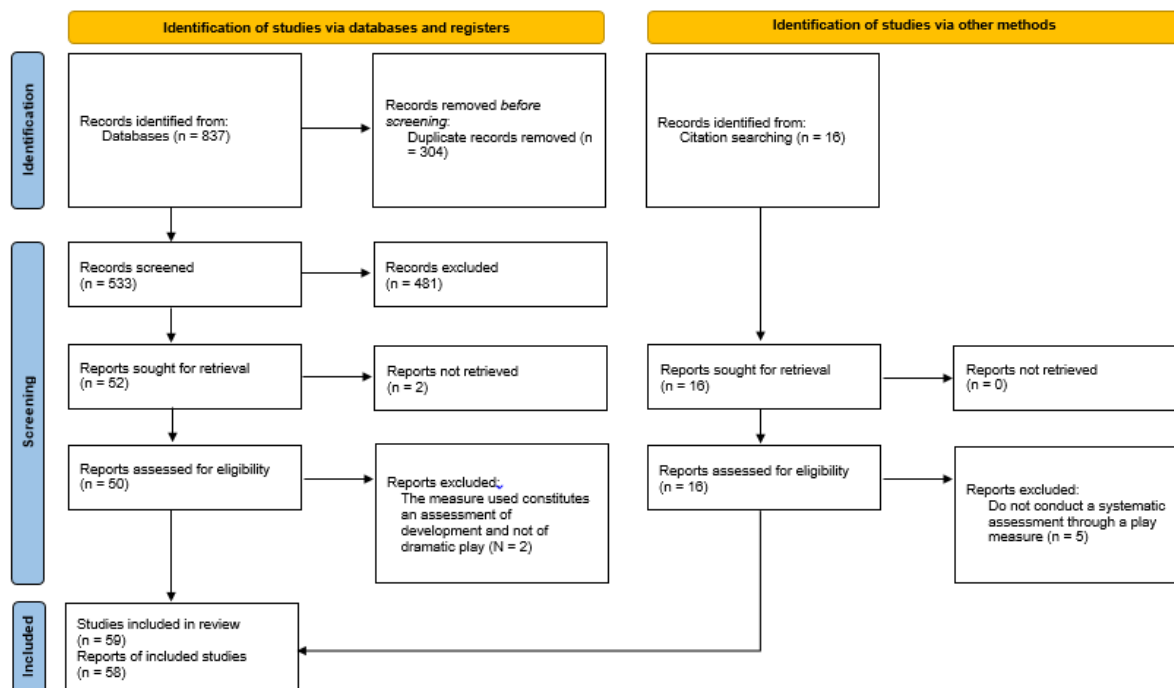
Table 1

Database Search Summary

Date	Database	Language	Booleano	N results
17.06.2020	EBSCO host	english	(pretend play or sociodramatic play or dramatic play or fantasy play or make-believe play) AND (play assessment or instrument)	368
23.06.2020	WOS	english	((pretend NEAR play) OR (sociodramatic NEAR play) OR (dramatic NEAR play) OR (fantasy NEAR play) OR (make-believe NEAR play)) AND ((play NEAR assessment) OR (instrument))	149
23.06.2020	SCOPUS	english	TITLE-ABS-KEY ((pretend AND play OR sociodramatic AND play OR dramatic AND play OR fantasy AND play OR make-believe AND play) AND (play AND assessment OR instrument))	120
25.06.2020	EBSCO host	spanish	juego dramático OR juego de fantasía OR juego de roles OR juego temático OR juego sociodramático OR juego de ficción OR juego de simulación AND instrumento	200

After screening by reading the full text, 58 reports were retained, composing the final set of analyses (see Figure 1). The remaining reports were excluded because they did not meet the inclusion criteria: 362 referred to other topics like music, theater, dance, sports, drugs, working programs, literature, neuroscience, pedagogic programs in university. 55 were not academic articles, 25 were reviews, 45 did not assess dramatic play with a dramatic play measure, three did not meet the language criteria.

Figure 1: flow diagram of study selection.



2.2 Analytical strategy:

The studies included in the review were coded in order to obtain a survey of existing dramatic play assessments. In this sense, the studies had to meet the following requirement: to systematically assess dramatic play through a play assessment. Fourteen dramatic play assessments were identified.

Two researchers participated in the article coding process, identifying in each article the information corresponding to the following categories: year of publication, measure used to evaluate dramatic play, aims in relation to the measure, constructs associated with dramatic play, results of the association, limitations found in relation to the measure, if it is a validity study, if it reports data on the reliability of the measure. Five reports used two measures in the study, therefore those reports were assigned to both measures when coding it and reporting the number of studies that used each assessment.

About results reported by measure:

Ten dramatic play assessments were included in the review since there was not enough information to include the remaining four (despite having requested information from the corresponding authors). To synthesize the data, information of the measures is provided in a table format, including author, year of development, age range, evaluation features, validity and reliability data, and number of studies found in the review that use it.

About results reported by item content:

To analyze the items we retained four dimensions that are included in the PRoPELS (Leong & Bodrova, 2012): Plans, Roles, Props and Scenario. We considered that an item addressed the dimension Plans when it referred predominantly to children's ability to think about different aspects of play such as roles, actions and scenarios, before starting to play (Leong & Bodrova, 2012). We considered that an item addressed the dimension Roles when it referred predominantly to the child's ability to pretend to be someone else, taking on the specific characteristics associated with this new identity, such as language, actions, and emotional expressions. An item was classified as addressing Props dimension when it referred predominantly to the objects the child uses during play and the way he/she uses them, including the ability to play without props. An item was identified as referring to Scenario dimension when it addressed predominantly the theme and scripts to which children play and when it gave information about the coordination between the actions and scenes that children perform.

The items were classified according to their content as specific, nonspecific, or irrelevant. An item was considered specific when it provided information on one dimension separately (for example the item “make-believe with objects” assesses when “toys, unstructure material, gestures, verbal declarations are substituted for real objects”). It was considered nonspecific when it provided information on more than one dimension (for example, when dramatic play is coded in the PPS if the child performs at least one of the following: names the roles/ assigns roles explicitly (Roles), steps out of the role to change the script (Scenario), proposes what to simulate/ makes suggestions to another child (Plans), or makes explicit in other ways that he/she is involved in dramatic play). Finally, an item was considered irrelevant when it did not provide information on any of the dimensions considered.

Two PRoPELS dimensions were excluded for this analysis: Extended Timeframe and Language. Extended timeframe was excluded as it is a dimension difficult to consider in some evaluation scenarios, for example, measures that involve an assessment at a single moment, and for a limited period of time. Language was excluded because there are no clear indicators in the PRoPELS to assess it.

About the classification of the measures:

After classifying the items, each measure was analyzed globally to determine its comprehensiveness. At this level, it was analyzed by the number of dimensions assessed specifically, which was given by the previous analysis of the items. A measure was considered comprehensive when it assessed at least 3 dimensions separately.

3. Results

3.1 Dramatic Play Measures

The 10 measures analyzed are: Peer Play Scale (PPS; Howes, 1980), Smilansky Scale for Evaluation of Dramatic and Sociodramatic Play (Smilansky & Shefatya, 1990), Test of Pretend Play (ToPP; Clift, Stagnitti & DeMello, 1998), PLAY observation system (Farmer-Dougan & Kaszuba, 1999), Child Initiated Pretend Play Assessment (ChIPPA; Stagnitti & Unsworth, 2004; Stagnitti, Unsworth & Roger, 2000; Swindells & Stagnitti, 2006; Uren & Stagnitti, 2009), Play Observation Scale (POS; Rubin, 2001), The Affect in Play Scale - Preschool (APS; Russ, 1993, 2004), The checklist for the evaluation of the level of play and self-regulation skills (Brédikytė, et. al., 2017), Dyadic Pretend Play Assessment (DPPS; Jaggy, Perren & Sticca, 2020), Play Matrix (Veraksa, Veresov & Sukhikh, 2022). They are presented in chronological order, according to the year of their publication, in Table 2.

Table 2

<i>Dramatic Play Assessments</i>			<i>Application specifications</i>				<i>Psychometric data of the measures and use in research</i>				
Name	Author/s	year	Age (years)	Observer	Setting	Duration (min)	N° items	Scoring	Validity	Reliability	Use in research
PPS	Howes	1980	1-4	e	Class with peers	20	2 categories = 15 items	not specified	construct	inter-rater (.87-.93 Mdn = .89) in english: inter-rater (.88)	5
Smilansky Scale	Smilansky	1990	3-8	e	Class with peers	20 - 30	6 items	likert scale 0 to 3	construct; concurrent; predictive	in hebrew: inter-rater (.84-.87); test-retest correlation (.84)	3
ToPP	Lewis, Boucher & Astell	1992	1-6	e	One on one with assessor	not specified	4 sections (13 items)	2pts for each original action and 1pt for each imitated action	construct; concurrent	inter-rater (k = 0.68)	10
PLAY observation system	Farmer-Dougan & Kaszuba	1999	3-5	e	Class with peers	40 (divided in 4 days of 10 minutes)	1 main categories and other subordinate	1 to 4 main categories and 0.1 to 0.3 subordinate categories percentage of elaborated actions (e.100/total actions).	predictive	inter-rater (.92) inter-rater (k = 0.7-1.0); test-retest correlation (.50)	1
ChIPPA	Stagnitti	2000	3-7	e	One on one with assessor	18 - 30 15 (divided in 5 minutes intervals in different days)	4 items	not specified	concurrent	inter-rater (.92); internal consistency (r = .88)	21
POS	Rubin	2001	not specified	e	Class with peers	not specified	3 main categories and 5 levels	likert scale 1 to 5 except the items frequency and variety of affect	no information	inter-rater (k = .8-.9)	0
APS-P	Kaugars & Russ Hakkarainen, Bredikyte, Brandisauskienė & Sujetaite-Volunzeviciene	2009	4-6	e	One on one with assessor	5	5 sections (7 items)	likert scale 1 to 4	construct	inter-rater (.92); internal consistency (α = 0.907)	11
The checklist	Jaggy, Perren, Reckziegel & Sticca	2015	3-6	t	Class with peers	not specified	7 items	likert scale 1 to 4	no information	inter-rater (.81-1.0); internal consistency (α = .87-.89)	0
DPPA	Jaggy, Perren, Reckziegel & Sticca	2020	3-5	e	2 peers with assessor	7	5 items	likert scale 1 to 4	convergent; criterion	inter-rater (.81-1.0); internal consistency (α = .87-.89)	1
Play Matrix	Veraksa, Veresov & Sukhikh	2021	not specified	e	child in group	not specified	3 sections (22 variables)	assigned one or more variable	not tested	not tested	

Notes: PPS = Peer Play Scale; ToPP = Test of Pretend Play; ChIPPA = Child Initiated Pretend Play Assessment; APS-P = Affect in Play Scale - Preschool; The checklist = The checklist for the evaluation of the level of play and self-regulation skills; POS = Play Observation Scale; DPPA = Dyadic Pretend Play Assessment; e = examiner; t = teacher

Four measures were excluded due to insufficient information after no response was received from their authors, who were contacted by e-mail. They are: Play in Early Childhood Evaluation System (Kelly-Vance & Ryalls, 2008), Transdisciplinary Play-Based Assessment (Linder & Bixby, 2010), Make-believe play observation tool (Germeroth, Bodrova, Day-Hess, Barker, Sarama, Clements & Layzer, 2019) and Tools of the Play Scale (Jaggy, Perren & Sticca, 2020).

The Pen Interactive Peer Play Scale (Fantuzzo et al., 1995) was excluded since, although the assessment context is play, the purpose of this instrument is to assess children's social interaction properties. For this same reason, the second part of the instrument The checklist for the evaluation of the level of play and self-regulation skills (Brédikytė et al., 2017) was excluded, given that it aims to specifically assess SR and not play.

3.1.1 Theoretical Framework

When we analyzed the theoretical framework of the measures, we found that five of them seek to integrate different components of pretend play, referring to different theories. The Play Observation System and the POS articulate social (Parten, 1932) and cognitive (Smilansky, 1968) of play. The APS refers to pretend play and proposes an intersection of cognitive processes, affective processes and interpersonal processes (Russ, 2004). The DPPA assesses social pretend play which they define as a multifaceted concept, suggesting that is play with an interaction partner that contains five features: decentration, decontextualization, role-taking, planning and sequencing. The Smilansky Scale assesses dramatic play, focusing on object substitution, role playing and interaction between players.

Two measures assess non-social symbolic play (ChiPPA and ToPP), defined by them as play where objects and actions are used as symbols (Lewis, et. al., 1992). They divide three types of symbolic play: (a) the use of symbolic actions to represent absent objects, (b) use of symbolic actions to represent an absent property, and (c) the use of an object symbol to stand for or substitute for another object.

Two measures define play from a cultural-historical perspective (The Checklist and Play Matrix).

Finally, one measure focuses on the social aspect of dramatic play, based on Parten's (1932) categorization, which divides this activity into different stages, regarding the child's social participation in a play situation (PPS).

3.1.2 Setting

The setting of the measures differed in several aspects. Regarding the situation selected to report the play activity, we found from experimental situations to direct classroom observations. In terms of ecological validity, six measures (PPS, Smilansky Scale, PIPPS, PLAY system, POS and the Checklist) extracted data on the quality of a child's play within the

classroom. The remaining four (ToPP, APS, ChIPPA and DPPA) observed play in an experimental situation.

In the same sense, they differed in terms of the number of participants in the situation. Seven measures (PPS, Smilansky Scale, PIPPS, PLAY system, POS, the Checklist and DPPA) extracted data on the quality of a child's play, in a situation of interaction with one or more peers. These seven included the six that make an ecologically valid assessment. The DPPA was added, which although developed in an experimental situation, assesses play during the interaction between two children. The remaining three measures (ToPP, AFS and the ChIPPA) assess the quality of a child's play in a solitary play situation, although they include the possibility of adult mediation.

3.1.3 Populations under study

Four measures were developed and validated for the North American population, specifically in the U.S.A. Four were developed and validated in different European countries (England, Russia, Switzerland and Lithuania), one in Asia (Israel) and one in Oceania (Australia).

3.2.1 Dramatic play dimensions included in the measures:

To analyze the extent to which the measures contemplate the dimensions considered relevant from the cultural-historical perspective, four categories were used: Plans, Roles, Props and Scenario. These categories were recovered from the PRoPELS scheme (Leong & Bodrova, 2012). The dimensions and stages proposed by these authors represent the relation between play and EF. They show that as play becomes more mature, the child is able to plan and monitor his/her action, distance him/herself from the here and now, inhibit his/her immediate impulses, abstract his/her thinking and use language to mediate his/her action.

To synthesize the data, the items where each measure includes the dimensions are described in table 3. The description is divided into assessments that contain a specific assessment of the dimension and those that have a non-specific assessment of it (as explained in the Method section).

Table 3

Dramatic Play Measures and Executive Functions Assessment

Measure	Theoretical framework and assessed behavior	Categories			
		Plans	Roles	Props	Scenario
PPS	Parten (1932), who divided the development of play into six stages focusing on the social aspect. These stages progress from solitary play to group play. PRoPELS dimensions are contemplated in these stages.	Complex Pretend (Social Play categorie) is coded when the child has at least one behavior in which is included naming roles, explicitly assign roles, going out of the role to modify the script, making a proposal to pretend.	Cooperative Pretend (Social Play categorie) can involve pretending to be someone else, Complex Pretens (Social Play categorie) is coded when the child has at least one behavior like namig roles, pretending to be someone else.	Cooperative Pretend (Social Play categorie) can involve substitute objects or imagining objects	in Cooperative Pretend and Complex Pretend (in Social Play categorie) the children follow a script
Smilansky Scale	Cognitive and developmental psychology. According to the authors, dramatic play is an expression of the child's emerging awareness of his or her social environment		the item Takes on a Role assess if "the child undertakes a make-believe role and expresses it in imitative action and/or verbalization"; the item Interaction assess the interaction between the players, including if the play partner takes on a role	the item make-believe with objects asses when "toys, unstructures material, gestures, verbal declarations are substituted for real objects"	
ToPP	Assesses symbolic play, defined as representing an absent object with a symbolic action, representing an absent property through a symbolic action, and finally, using a symbolic object to substitute another object. PRoPELS dimensions are included in the 4 sections.		in Section 4: Self, asking the child to assign mental states to a bear, and to act out a role	along all the 4 sections the progression of symbolic play is assessed: the child has to substitute objects, play with absent objects, attribute properties to inanimated objects	in Section 4: Self, asking the child to play a simple scenario
PLAY observation system	Parten (1932), who divided the development of play into six stages focusing on the social aspect. Includes the categories proposed by Smilansky & Shefatya (1990) as subordinate categories (functional play, constructive play, dramatic play). Props dimension is contemplated in these categories.			progression in the process of object substitution: codeing from the functional use of objects to more complex behaviors like transforming objects in make-believe play	
ChIPPA	Assesses symbolic play (when it involves the substitution of one object for another) and conventional imaginative play (when the child plays with conventional objects). It has four items: Play Actions, Object Substitution, Imitation Actions and Verbalization. PRoPELS dimensions are contemplated in items 1, 2 and 4.			codes each time the child uses an object as if it were something else and every time the child verbally attributes properties to objects or refers to absent objects	the child's actions are scored, from non-play actions to more elaborated, organized and coherent actions
POS	Assesses play by articulating social (Parten, 1932) and		in Cognitive Play categories, the	the Cognitive Play categories show how the	

	cognitive (Piaget, 1961; Piaget, 1977) aspects. It has one main categorie (Social Play) divided into 3, and 5 subcategories (Cognitive Play) included in each of the main categories.		dramatic play score is coded when any element of pretense appears, it can include the child taking on a role of someone else	child manipulates the objects, the dramatic play score can include the child attributing life to an inanimate object	
APS	Pretend play represents an intersection of cognitive processes, affective processes and interpersonal processes. It has one section (Quality of Fantasy) where it contemplates the PRoPELS dimensions. This section consists of three scores: Organization, Elaboration and Imagination.	to code the Quality of fantasy section, the description includes: "when pretend play was frequent with creative elementos, perhaps including a description of eventos before they occurred", "possible narration and description of activities"	the elaboration score (in Quality of fantasy section) includes "whether a child developed the characters"	in Quality of fantasy section the variety of toys and if the child pretends or imitates object sound is considered: in the section Type of Play, id coded the absence of play, if the play is functional or pretend or symbolic play	in Quality of fantasy section is included the organization and elaboration of the play events and it's embellishment
The Checklist	Cultural-historical developmental psychology, following the ideas of Vygotsky and El'konin consider play as a cultural activity. Introduce the term Narrative play, defined as imaginative social role-play activity where children jointly construct a storyline.		in the item Self-position: from no role behaviors to when the child is flexible and freely improvises a role; and Play Partner: from having a partner who has no role to having partner with a role, who could be imaginary	in the item Play Objects the process of objects substitution is assesses: from the use of objects accordig to their intended purpose to playing with imaginary objects	in the items Play Space where is scored if the space is real, created or imaginary; Play Actions, where the elaboration and organization of the actions is coded; Play script/narrative where the theme is scored; Main content of play where the main goal of the play es coded
DPPA	They assess developmentally advanced features of pretend play, integrating social and cognitive components of play. The categories are: Decentration, Decontextualization, Roletaking, Planning, Sequencing	the item Planning shows a progression in the ability of planning: no planning, plnned single play action without performance, planned and performed single play actions, several connected planned and performed play actions	the item Role-taking: no role taking behavior, role taking without role conforming behavior, role taking with some role conforming behavior, sustained role taking and role conformity	in the item Decontextualization: no decontextualization, object imitation, object substitution, fantasy transformation	in the item Sequencing: no sequencing, limited script elements are performed, several related actions are performed, flexible application of a script to the play
Play Matrix	They assess joint role-play. Define play as a culturally determined phenomenon, with three key components: an imaginary situation, roles and rules. It has 3 sections: Actions, Emotional manifestations and Verbal manifestatios.	the preparatory actions the child does are coded in section Actions; when the child regulates the behavior of others, when he announces characters or discuss the development of the play, are coded in section Verbal manifestatios	all the actions related to the character are coded in section Action, such as actions relevant to the character but not consistant to the plot, actions typical for a character, original acitions related to a character, stepping out of the character and assuming multiple roles		

Notes: dark gray = specific items; light gray = non-specific items; PPS = Peer Play Scale; ToPP = Test of Pretend Play; ChIPPA = Child Initiated Pretend Play Assessment; APS-P = Affect in Play Scale - Preschool; The checklist = The checklist for the evaluation of the level of play and self-regulation skills; POS = Play Observation Scale; DPPA = Dyadic Pretend Play Assessment

3.2.2 Specificity and dimension coverage

We were interested in analyzing if the items were specific and, at the same time, the number of dimensions that were included in each measure.

The most attended dimensions were Roles and Props, assessed each by five measures specifically (Roles - Smilansky Scale, ToPP, The Checklist, DPPA and Play Matrix; Props - Smilansky Scale, ToPP, Play system, The Checklist and DPPA), followed by Scenarios assessed by four measures (ToPP, APS, The Checklist and DPPA). Plans was included in two measures (DPPA and Play Matrix).

Three comprehensive measures were found: one measure assessed all the dimensions considered to the analysis (DPPA) and two measures included three dimensions (The Checklist and ToPP). Two measures included two dimensions (Play Matrix and Smilansky Scale) and two measures included one dimension (Play Observation system and APS). The remaining three measures assessed dramatic play and its dimensions in a non-specific way.

4. Discussion

This scoping review had two goals: (a) identify the measures used to assess dramatic play and their properties, and (b) identify the extent to which the measures provide data about children's regulatory ability.

Regarding the first goal (a), 10 dramatic play measures were analyzed. As the results showed, the measures differed on several aspects. As Thompson and Goldstein (2019) pointed out, there is a diversity in the definition of dramatic play. In this study, heterogeneity appeared in the theoretical framework of the measures, resulting in that they address different aspects of the activity (social, cognitive, symbolic and/or regulatory).

We identified differences in the measures regarding the settings, and while some assessed dramatic play in a social situation, others did it in an individual situation. However, all reported on the child individually considered, and not on the quality of play in terms of social participation, with properties that depend on all participants rather than on each individual child. These aspects are important if one considers that play is a social activity by nature and also promotes the ZPD, according to Vygotsky (1978), Elkonin (1980) and followers (Bodrova et al., 2013; Brédikyté, 2011). This discussion was brought by the authors of the assessments themselves. For example, Jaggy, Perren Sticca (2020) argued that the test-retest reliability results of the DPPA were influenced because at both times the partner with whom the child played changed, highlighting that it is not possible to rule out the effects that the children's relationship has on their play. The only assessment that incorporates this is the

MPOT (Germeroth et al., 2019), but it was not part of this review because not enough information was obtained for its analysis.

In terms of ecological validity, six measures (PPS, Smilansky Scale, PIPPS, PLAY system, POS and the Checklist) extracted data on the quality of a child's play within the classroom. For some authors (Germeroth et al., 2019) it is necessary to evaluate play in everyday social contexts, such as classrooms, because this allows preserving the properties of play without the need to create artificial situations that disturb the nature of the play activity and interfere in its development. Some authors (Brédikytė et al., 2017; Germeroth et al., 2019;) also point out that teachers are key informants regarding play, because they are the ones who know the children best and whose presence during play does not result in an interfering factor. They also add the need to incorporate child/adult interaction in the assessment in order to determine the influence that teachers' interventions have on the quality of play (Germeroth et al., 2019). This aspect was not addressed by any of the assessments analyzed in this review. The PPS presents a section called "Teacher Behaviour Ratings" and another called "Children-Child Relationship Ratings", but they do not consider the adult's intervention in the play but only their degree of involvement or their affective relationship with the child. The review also showed that sociocultural diversity is unattended in the samples of the studies (Henrich et al., 2010). Measures that consider a sociocultural diversity of populations are needed. Especially measures that include the social situation of children growing up in contexts of broad social inequality, to which different patterns of interaction both with adults and among peers could correspond (Rogoff, Dahl & Callanan, 2018). For example, in our case, the particularities of Latin American schools should be taken into account, which usually have large groups, only one teacher per group, and significant levels of inequality and social vulnerability.

Regarding the second goal (b), the measures were compared with the PRoPELS and it was found that the coverage of the dimensions has been heterogeneous. The most attended dimensions were Props and Roles, followed by Scenario. Although Props was one of the most included, it is not necessarily the most crucial one. In fact, object substitution appears early on and props centered play is characteristic of immature phases of the development of play (Elkonin, 1980; Leong & Bodrova, 2012). Regarding Roles and Scenarios, the content of the items is diverse, which maintains the heterogeneity in the way that it is included. Finally, the least dimension addressed was Plans, however, planning ability is a central aspect of the development of SR (Bodrova, et. al., 2013). This raises the question of whether it is possible that some dimensions are more crucial for defining dramatic play than others (Thompson & Goldstein, 2019).

When considering the measures overall coverage of the elements of the PRoPELS, it was found that few of them are comprehensive, i.e., they include at least three of the critical dimensions of play (DPPA, the Checklist and ToPP). If dramatic play is a complex activity with different aspects to observe (Leong & Bodrova, 2012), measures used to assess it should be capable of capturing such complexity. However, most assessments include the dimensions partially, and in a non-specific way (e.g., combined with other elements of play). Although they show the progression of this activity identified by many authors (Elkinin, 1980; Leong &

Bodrova, 2012), moving from lower to higher levels of maturity, in their items you cannot assess roles, plans, props and scenarios separately. Furthermore, if there is an intrinsic relation between play and SR (Bodrova et. al., 2013; Brėdikytė & Hakkarainen, 2017; Carlson et. al., 2014; Manuilenko, 1975; Smirnova & Gudareva, 2016), measures should include aspects that refer to this ability. This review showed that given the features of the measures used to assess the quality of dramatic play, it is unlikely to see if a relationship between dramatic play and SR exists.

Next steps for dramatic play assessment research:

This review analyzed ten dramatic play measures and found that only three of them incorporate the central aspects defined from a cultural-historical perspective (Leong & Bodrova, 2012). To know more about the role of dramatic play in the development of SR, more comprehensive measures are needed, that show that as play becomes more mature, the child is able to plan and monitor his/her action, distance him/herself from the here-and-now, inhibit his/her immediate impulses, abstract his/her thinking, and use language to mediate his/her action. Furthermore, studies that aim to analyze the association between comprehensive dramatic play measures and measures of SR and EF are needed, and could show a positive correlation between them.

Finally, the review showed that dramatic play is usually assessed in a classroom context. Dramatic play assessment should be extended to more natural, non-educational contexts, so that more diversity of populations are taken into account.

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