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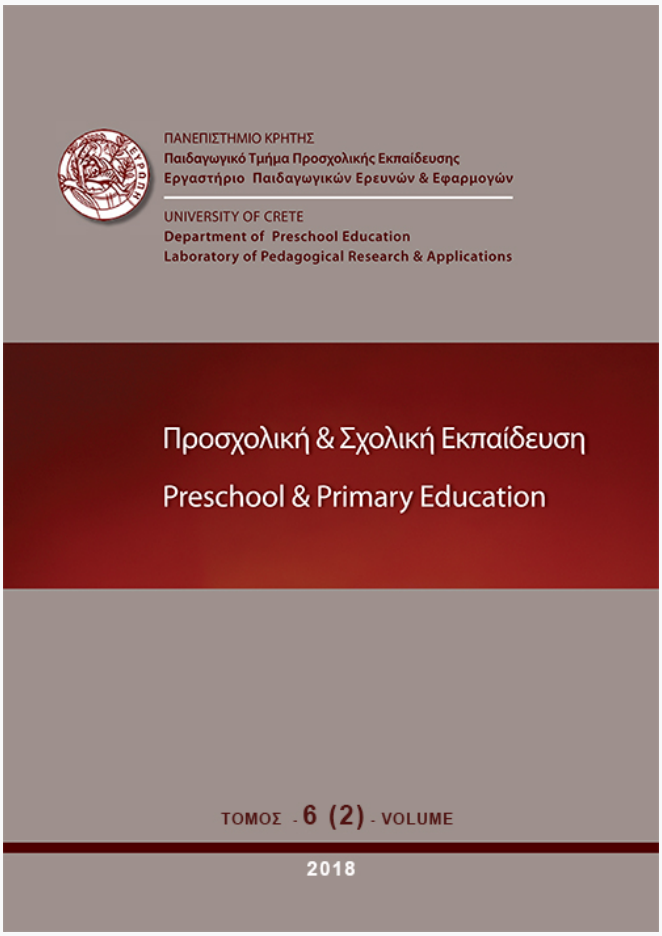

Does theatrical play promote social skills development in students with autism? A systematic review of the methods and measures employed in the literature

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Does theatrical play promote development of social skills in students with autism? A systematic review of the methods and measures employed in the literature

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Summary. This systematic review cites a number of programmes and critically analyzes methods and measures used to develop social skills in young students with Autism Spectrum Disorders (ASD). Social skills are interpreted through a ToM theory lens, emphasizing interactions such as understanding, explaining, predicting, and manipulating the behaviour of themselves and others. The aim of this review is to study the role of theatrical play programmes and its effect on social interactions and social skills on students with ASD. An online search through ProQuest and First Search resulted in twelve studies of diverse methodologies. All these studies support the value of theatrical play as a means of social skills development. More specifically, the qualitative as well as the quantitative data, which included video, participant observations, interviews questionnaires and tests, indicated these programmes benefit ASD students' social skills such as cooperation, communication and social awareness. Findings suggested that the pedagogy of theatrical play engendered engagement and promoted positive social interaction with students without disabilities in integrated school environments. More longitudinal studies are needed to develop the techniques of theatrical play at school and the planning process in order to achieve the intended outcomes. With appropriate curricular decisions and knowledge, theatrical play methods can hold an essential place in the classroom. Synchronizing theory with art and cooperative play seems to be the key to answer such assumptions positively.

Keywords: Theatrical play, cooperation, social skills, Autism Spectrum Disorders

Introduction

Over recent years, considerable educational research has focused on evaluating different theatrical play programmes which develop and improve social skills such as cooperation, communication, and social awareness in students with ASD (Kempe & Tissot, 2012). Theatrical play is a relatively new educational approach within the school system and it is used as an alternative teaching method to promote social skills in students with different disabilities, such as ASD. The vast majority of the studies are primarily based on teachers' and/or parents' views, beliefs, perceptions or observations about the effect of theatrical play activities on social skill development of ASD students (Brandalise, 2015; Kasari, Rotheram-Fuller, Locke, & Gulsrud, 2012).

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The quintessence of theatrical play objectives according to Carleton (2012), focus on combining theatre and play with cooperative learning as a dynamic set that causes interactions in a social environment, such as school, which greatly strengthens students. Bailey (2014) also highlights the important role of theatrical play in changing behaviour and developing cooperation with others, as well as in developing of social initiative. Different studies have also stressed the teacher's role on the beneficial impact of theatrical play in supporting healthy social development in young students with ASD (e.g. Ramamoorthi & Nelson, 2011).

In light of these facts, the authors' aim is to further investigate the impact of theatrical play programmes on promoting the development of social skills in students with ASD within an inclusive environment by, employing a systematic review.

Theoretical Perspective

Every day students engage in a wide variety of social interactions to achieve a diverse set of social goals that include influencing a partner's behaviour and maintaining emotional intimacy through sharing thoughts and feelings. According to Baron-Cohen, Leslie and Frith (1985) the Theory of Mind (ToM) focuses on core social deficits underlying the social, behavioural, and communicative challenges characteristic of ASD. All social behaviours are not impaired; some abilities are preserved, especially in high-functioning autistic individuals. One explanation of the mix of core challenges and preserved abilities could be explained by a single deficit—an inability to attribute mental states to oneself and others. According to Schwebel, Rosen, and Singer (1999) in students with autism, the Theory of Mind (ToM) and the skills that derive from it can be acquired through a learning process, such as play. They asserted: "In socio-dramatic play, children learn to understand the different perspectives of others by agreeing or disagreeing on a shared pretend focus or negotiating roles (e.g. let's pretend that we're both firemen and we have to put out the fire at the school) he's inviting the other child to enter into his mind and share his fantasy with him" (Schwebel et al., 1999, p. 335).

Several studies support the idea that the theatrical play programmes incorporate a number of promising strategies for social skills training such as: providing a nurturing, fun environment, natural reinforces, and multiple trainers (Copeland, 2011; Doenyas, 2016; Kamps, Mason, & Heitzman-Powell, 2017). Overall, the quality of theatrical play teaching constitutes the cornerstone of effective social skills and is evident through the cooperation between students.

Social skills and autism

The difficulty or inability to deliver an acceptable definition of social skills also creates significant difficulties in recognizing behaviours that make up the meaning of social skills in a commonly accepted way. According to Bloomquist, (2013), the determination of behaviours depends on the degree of quality and the difficulty of individual response to various situations, while according to Laurel and Taylor (2016) social behaviours depend on a person's ability to respond to five different reporting categories of skills (basic communication skills, empathy and rapport skills, interpersonal skills, problem-solving skills, accountability). In this case, a person who wants to improve his/her social skills should focus on imitating desirable attitudes and eliminating undesirable. However, according to McClelland Cameron Ponitz, Messersmith, and Tominey (2010) social behaviours are organized into social competence, emotional competence, cognitive process, and self-regulation, because through these people can monitor their everyday lives and involvement in other activities that are

controlled forms of human interactions. Recent findings support view that there is a strong correlation between the difficulties which students with ASD face in terms of social skills and their s social isolation (El Achkar & Spence, 2015; Locke, Williams, Shih, & Kasari, 2017).

Recent findings support view that there is a strong correlation between the difficulties which students with ASD face in terms of social skills and their social isolation (El Achkar & Spence, 2015; Locke, Williams, Shih, & Kasari, 2017). These students do not perceive the power of communication, which directly or indirectly, can influence their behaviours and interactions in a social environment such as school. Indirectly related to incomplete communication is also the misinterpretation or omission of non-verbal elements. The difficulty of "translating", according to Barak and Feng (2016), means that the message is not adequately comprehended and is difficult to interpret within the context of communication.

Ingersoll, Schreibman, and Stahmer (2001) maintain that poor social skills have a negative impact on students with ASD regarding both cognitive development and school performance. According to Boutot and Myles (2011), students with ASD lack both social skills and interpersonal relationships. Boucher (2017) states that the lack of interpersonal relationships has a negative impact on the emotions and psyche of these students. Hall (2017) also claims that emotional and behavioural problems are inherent in social skills deficits.

The role of theatrical play

Over recent years, teachers and specialists in fields of Special Education and Adapted Physical Education have attempted to design individualized programmes to improve the personalities of students with ASD (self-image, emotion, interaction) and to develop their social skills. Based on contemporary literature, educational programmes are usually supervised by a multidisciplinary team involving teachers, school psychologists, and special pedagogues (Goldstein, Lerner, & Winner, 2017). According to Wooland (1993) schools today try to include theatrical play as a learning medium in specialist settings. Typically, the extent of the theatrical play in many schools is only a didactic hour and thus is not sufficient to support the goals of improving social skills among students with ASD. One of the most important reasons is that many teachers prefer to follow the general education curriculum and spend more time on theory than practice. The role of the teachers is of the utmost importance in ensuring the success of students with ASD. The teachers set the tone of the class and are responsible for making sure all the needs of the students are being met. Children who participate in theatrical play programmes in class feel more comfortable, improve their ability to play cooperatively, share, speak with respect, communicate while smiling, and say appropriate pleasantries, like please and thank you.

Less experienced teachers may lack confidence in using theatrical play as an educational method because of it requires reflection in action and subtle blending of spontaneity and structure (Goldman et al., 2017). On the other hand, more experienced teachers have the flexibility to create appropriate conditions to teach social skills with little scope for failure in a ‘safe environment’ such as schools. In each case, according to Smagorinsky (2016) students with ASD face distinct challenges for both social and imaginary play which place them at high risk for being excluded by peers:

“Rigid adherence to simplistic interpretations of the autistic “triad of impairments” in communication, interaction and imagination can in practice lead inadvertently to the development of services and professional practices that struggle to address the needs of those children who are identified” (Billington, 2006, p. 2).

Based on these assumptions and theoretical perspective, these recommendations are critical to theatrical play research because small but consequential adaptations in a study's design for students with ASD, or in the way a study is reported, can affect how educators

view that study in particular, and theatrical play generally. This review of the current literature may help researchers design more rigorous studies that can guide educators and administrators to make decisions concerning the inclusion of theatrical play in their teaching methods.

Methodology

Purpose of the study

The scope of this systematic review is limited to studies published in English after 2010 that investigate the social skills development and social interactions between students with ASD and typically developing students who participated in theatrical play programmes in a school environment.

Research Questions

1. What does research on theatrical play programs tell us about their impact on social skills development for students with ASD?
2. Are there any robust results that can help and train teachers in school to select the right theatrical play programme for students with ASD on basis: a) its suitability for adaptation, b) the degree of difficulty, and c) both direct and indirect third-party involvement?
3. Are there particular points that need to be borne in mind for future research, through the same body of research?

Systematic Review

"A systematic review is a journey where you want a companion who knows what they are talking about" and is able to address much broader questions than single empirical studies (Boland, Cherry, & Dickson, 2014). Despite much discussion on the challenge that the volume of data presents in applying data mining and other techniques, the use of a clear systematic review protocol is effective not only in guiding researchers throughout the process-keeping them 'on track' but also in improving the methodological transparency of the review. This enables researchers to systematically compare and target studies on an international level (Gough, Olivier, & Thomas, 2017).

A systematic review was conducted to locate, evaluate and synthesize all the empirical evidence which is available as published and unpublished work and which addresses the research questions. The transparency of the selection and review of studies differentiates a systematic review of other types of reviews, while also enhancing its quality (Lecheler, 2014). It is important to distinguish a systematic review from a meta-analysis. Meta-analysis is defined as the quantitative analysis of the results of multiple studies. A systematic review need not include a meta-analysis, nor must a meta-analysis be based on studies located through a systematic reviewing process (Valentine, Piggott, & Rothstein, 2010).

The key features of a systematic review as presented by the Evidence for Policy and Practice Information and Co-ordinating Centre (EPPI-Centre, 2012 as cited in Hallinger, 2013) are:

- Understandable and transparent methods
- Research which follows a standard set of stages
- It is accountable, replicable and updateable

- There is a requirement of user involvement to ensure reports are useful

The transparency of the systematic review in this study becomes evident by the fact that the reader can conduct the same review once again, since each stage of the procedure is explicitly presented. These four key features help researchers reviewing research evidence be clear about what the reports show about the subject.

As suggested by Templier & Paré (2015) there are just six steps to conduct a systematic review:

1. Formulating the research question(s) and objective(s)
2. Searching the extant literature
3. Evaluating the applicability of the material
4. Assessing the quality of primary studies
5. Extracting data
6. Analyzing data

The first step of the procedure has been presented above, while the remaining steps were conducted in a manner that will become clear in the remaining part of the article.

Terminology of theatrical play used in Literature

One of the important challenges in interdisciplinary research is to integrate the vocabularies and concepts of disparate academic fields. This is difficult in theatrical play research, which is the nexus of a number of academic disciplines: educational psychology, childhood education, and social sciences. Researchers and theorists have employed a large vocabulary of terms to refer to the same, similar, or related constructs as the one defined here as theatrical play.

This multiplicity of terms can be problematic because it is often difficult for scholars to determine whether studies that use identical terms are, in fact, investigating identical constructs. To alleviate this problem, over the last few years many attempts have been made by researchers to define or identify theatrical play in all its guises and pretend play from drama play, noting that "pretend play is concerned with but these attempts have failed due to the narrow context in which they have been developed or the conceptual language in which they are expressed (e.g., behaviouristic, physiological imitation and imagination events, and dramatic play) that participants have experienced in real life" (Woodard & Milch, 2012, p. 13). Goldstein (2012) on the other hand, does not seem to make this distinction. Sometimes pretend play is social: A group of children share an alternative reality that they project, perhaps acting like they are different people in another place and time. Other times pretending is a solo activity'' (Leslie, 1987, p.413). The lack of consensus about the meaning of the terminology used in social skills development in theatrical play research makes it is difficult to synthesize the research or to draw conclusions across studies. In Table 1 are presented the terms for theatrical play and similar or related terms used by the authors.

This complicates researchers' and scholars' endeavours to use bibliographic databases to locate literature that is relevant or related to their work (Table 2). This complication may thwart even the most diligent researchers' attempts to design their current research, based on previous findings in the field of social skills development and the category of students with ASD. The researchers needed to explicitly define the construct they are intending to investigate, and distinguish the terms they are using synonymously from the terms that they are using to convey disparate concepts. The researchers provided clear answers to their research questions through the literature of four electronic databases. The authors independently review each of the identified articles to determine eligibility and extract study information.

Table 1 Terms for theatrical play and similar or related

Term	Example authors who use the term
Theatrical play	Arendell, 2015; Falletti, Gabriele, & Victor, 2016
Symbolic play	Betterton, 2014; Goncu, & Gaskins, 2012; O' Sullivan, 2015; Varga, 2011
Imaginative play	Izard, 2013; Robert, 2011
Dramatic play	Dunn, & Stinson, 2012; Galda, & Pellegrini, 2015; Wajskop, & Peterson, 2015
Creative drama	Baldwin, 2012; Jennings, 2017; Rubin, & Merrion, 2011; Saka, Ebenezer, Çakır, & Saka, 2016
Drama	Carleton, 2012; Chasen, 2011; Conn, 2017; Fleming, 2017
Role-playing	Bowman, 2013; Mackay, 2017; Nelson, 2010
Pretend play	Carlson, 2011; Jarrold, & Conn, 2011; Weisberg, 2015
Socio-dramatic play	Gioia, & Tobin, 2010
Imitation play	Cardon, & Wilcox, 2011; Vivanti, & Hamilton, 2014; Warreyn, Van der Paelt, & Roeyers, 2014
Thematic fantasy play	Cho, & Shin, 2014; Gould, 2015; McInnis, 2014
Improvisation	Frost, & Yarrow, 2015; Johnston, 2013; Sawyer, 2011
Make believe	Cremin, Flewitt, Swann, Faulkner, & Kucirkova, 2017; Lewis, & Mitchell, 1994

Gathering data through online resources

The studies selected in this systematic review investigated the impact of theatrical play programmes on social skill development for students with ASD.A specific set of words was selected as the one that had the most effective searching results through First Search and ProQuest: (theatre OR theatrical play *autism OR Drama techniques *autism OR Role-Playing techniques *autism OR Creative Drama *autism) AND (social skills OR social interactions OR social development OR social evaluation*) AND (autistic childhood OR adolescence).

All of the studies identified were available in English and were published after 2010in academic journal articles, and theses. All searches were done by the first author, on the 18th of August in 2017, resulting in 13,400 studies, which were limited to 108 after scanning through the titles and subtitles (Figure 1). The inclusion criteria for the selected studies focused on four critical elements: the publication status of the studies, interventions, outcomes, and participants. Any study that met the inclusion criteria based on the four elements was included in the analysis. Many studies were excluded, mainly because they came from other disciplines, such as medicine, or clinical environment. This analysis is investigating only the educational environment and how students with ASD can manage social behaviour in theatrical play in school communities and interact through time with typical students (e.g., small groups of one or two classes of a specific age). From this point

onwards both authors worked collaboratively to decide and apply the exclusion criteria. The studies included and excluded in this analysis are presented in Table 2.

Table 2 Systematic review inclusion and exclusion criteria

Category	Inclusion criteria	Exclusion criteria
Publication dates	July 1, 2010-November 27, 2017academic journal articles, book chapters, Thesis form	Published pre 2010 Non-research paper (i.e., discussion editorial or paper without abstract, unofficial data, publication related to an already added paper)
Publication language(s)	English language	Non-English language
Study types and designs	Original qualitative studies (i.e., interviews, focus groups, and observations) or mixed methods	Studies that (only) capture quantitative data and use quantitative methods of analysis, Meta-analysis, longitudinal or cross-sectional studies, single case study or reviews.
Population of interest	5 to 14-year-old children (girls and boys) with high or borderline autism	ASD children with moderate and severe IQ or any other neurological deficits who attending mainstream schools Teachers and parents beliefs and views about influence of theatrical programmes
Study types of measures	Standardized tests and non-standard measures, report questionnaires, interviews and observations (mixed measures)	
Type of intervention outcomes	Theatrical play only as technique for social outcomes for children with ASD. Jennings (2017) and also Malchiodi and Crenshaw (2015) characterized it as one of the creative drama techniques	Theatrical play studies with no specific or clearly social outcomes (i.e., examining only social behaviour, needs or both behaviour and social needs)

Table 3 List of databases and search term used to identify relevant studies

Databases	Theatrical Play Terms	Social skills Terms	Participants Parameter Terms	Excluding Terms
PsycINFO ERIC ECO WorldCat (Dissertations & Theses)	Theatrical play Theatrical game Symbolic play Collaborative-play Imaginative-play Drama in school Theatre in school Dramatic play Drama Creative play Creative drama play Creative dramatics dramatization Role-play$ Play Fantastic play Pretend play Fantasy Imitation Gesture and play Mimic Social symbolic play Socio-dramatic play Socio-symbolic play Thematic fantasy play Theat$ Play training Play tutoring Re-enact$ Story acting	Social-interaction Communication Social ability Social-relationships Cooperation Body language Gestures Understanding Initiative Social rules Verbal Nonverbal-communication Imitation Joint attention play	Asperger High Functioning Autism High cognitive level (IQ) Age 5-14 Primary & Secondary schools	Abnormal$ Aphas$ Blind$ Deaf Disab$ Disord$ Downs Dyslex$ Hyperact$ Impair$ Retard$ Syndrome Emotion$

Note. $ is a database search convention that indicates a search for the preceding word stem with all possible endings

This process led to a final set of twelve papers included in the review for analysis. All of the studies in this review employed an intervention that met the construct definitions of creative-drama interventions. The terms creative drama and theatre play are used as

synonyms because theatrical play is one of drama techniques, and according to the proponents of dramatic practice (Neelands, 2000; Van de Water, McAvoy, & Hunt, 2015) theatre is largely concerned with communication, while 'drama' is largely concerned with experience.

A systematic search of four databases PsycINFO, ERIC, ECO, WorldCat, Dissertations and Theses was conducted to identify the literature that investigates these twelve studies. The list with search of terms used to identify the studies are presented in Table 3.

The aim was to identify studies to investigate theatrical play practices that can be translated into effective programmes for students with ASD as the targeted population and their social skills development. However, this review focuses only on the target population and the ability of students with ASD to respond to social challenges through theatrical play sessions and not participants watching or playing roles in theatre productions.

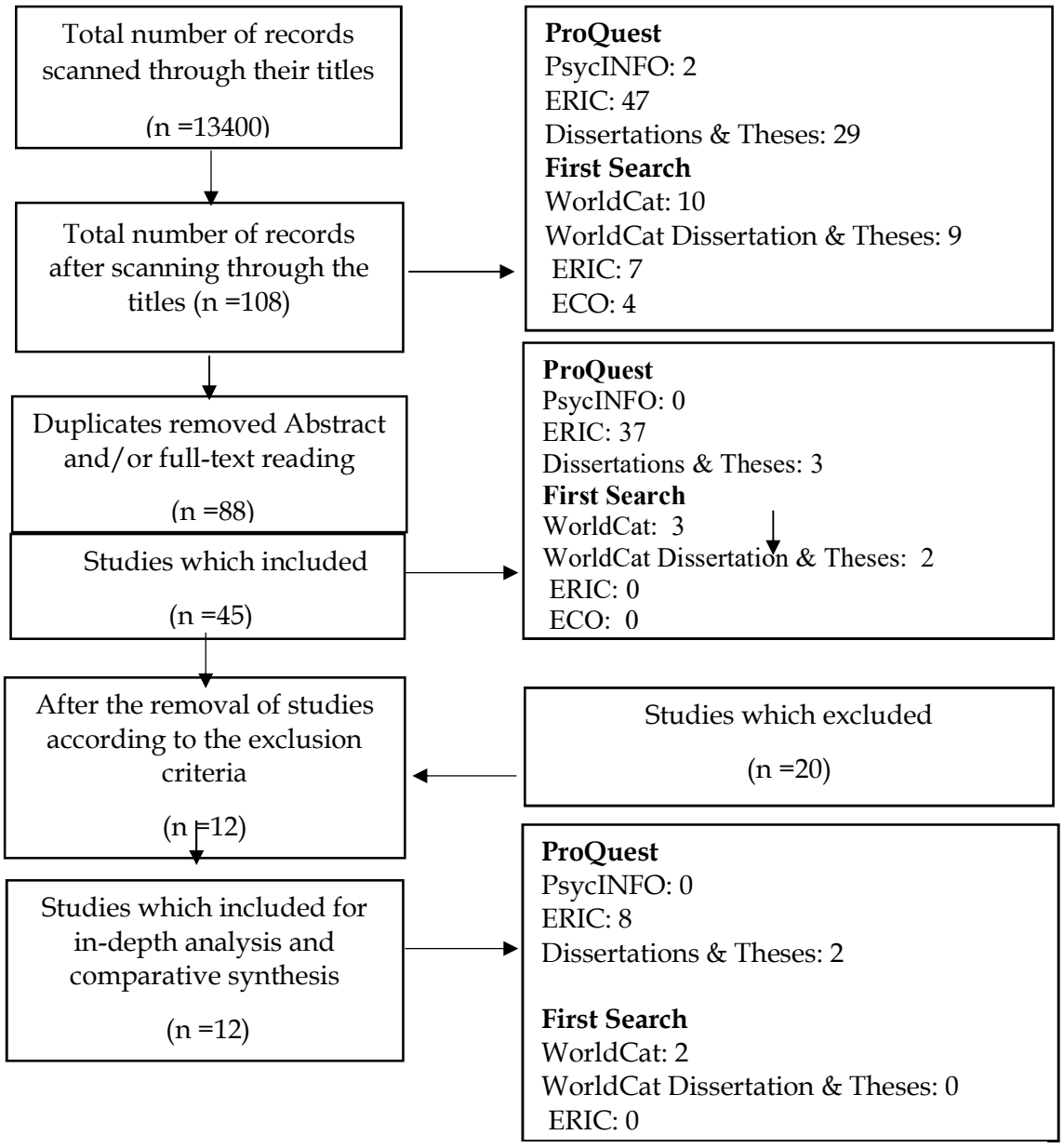

Figure 1 Selection process with numbers of studies identified at each stage

A final search was done by having 5- to 14-year-old students with ASD as the targeted population without low cognitive level or relevant disabilities who were included in primary and secondary school. Based on these limitations and type of publication PhD or EdD theses, dissertations, and research articles were included. Studies that focused on students with ASD in this age group and also included slightly older students were not excluded from this analysis. On the other hand, studies that focused on typical students and teachers' beliefs and views about the influence of theatrical programs, or parent-focused interventions were excluded. Studies that assessed social skills such as cooperation, communication, joint attention, social rules, initiative, social interactions, verbal-nonverbal communication, and play were included.

Any study that met all of the above criteria was coded and entered into a database for further analysis. The codes assigned to indicated, for example, the study's design, the type of intervention that was implemented, the outcome or outcomes assessed, and any measures. It is also important to note that the term "study" reflects diverse types of cases, such as journal publications, PhD and EdD theses, etc. Twelve unique studies were included in the analysis. The selection process with numbers of studies which were identified at each stage until the final selection are presented in Figure 1.

Data Analysis and Discussion

Some authors of these twelve studies introduced methodologies of theatrical play evaluation in intermediate development steps. Others just evaluated the final result (Table 5). There was a wide set of techniques and measures used for evaluating theatrical play programmes for students with ASD, but the wide range of methodology made the comparison among all of the studies difficult, and in some cases impossible. In this case, content analysis was employed to simulate social experiences and collect survey answers (Krippendorff, 2012). Categories were derived from the data and not predetermined, according to conventional content analysis as described by Sarantakos (1993).

Each study is related to a certain use of theatrical play in different social skills and/or a form of different measures. The type of theatrical play used, if provided within each study, is presented in Table 5, in the column 'Research Methods'. Measures found across the studies can be divided into two categories, a) observations and b) standardized tests.

It is important to note that all of the literature analyzed for this review presented the term 'theatrical play' with other synonyms, only four of twelve studies which were published in this review had as second synthetic the term "play" (studies, 1, 6, 8, and 12). Researchers have employed a large vocabulary of terms to refer to the same, similar, or related constructs as the one defined here as theatrical play. Although researchers select particular terms to refer to very distinct concepts, some of them use those same terms to denote different conceptual constructs. In this review, most of the studies were designed to investigate the effects of theatrical play as an educational method for specific social skill development (social communication, interactions, cooperation, and friendships) for students with ASD. However, only in the first study the results about the effect on social skills is not clear (e.g., the most important result in the first study was the ability of children to participate in simple play acts and pre-symbolic- symbolic play acts).

Table 4. Description of studies

Studies	Aim	Sample	Method	Instruments	Results
1. Chang, Y.C., Shih, W., Landa, R., Kaiser, A., & Kasari, C. (2017). Symbolic play in school-aged minimally verbal children with autism spectrum disorder. *Autism Developmental Disorders*, *48*(5), 1436-1445	The effect of symbolic play on social interaction and expressive language skills of children with ASD	58 ASD children (5 to 8-years-old) who attended a primary school	A 6-months programme (symbolic play): JASP-EMT JASP-EMT+AAC)	ADOS-1 PPVT-4 SPA	Children with ASD in the programme increased the diversity of pre-symbolic and symbolic play acts. They improved their social communication skills
2. Beadle-Brown, J., Wilkinson, D., Richardson, L., Shaughnessy, N., Trimingham, M., Leigh, J., Whelton. B., & Himmerich, J. (2017). Imagining autism: Feasibility of a drama-based intervention on the social, communicative and imaginative behaviour of children with autism. *Autism,* 1-13.	The role of an imitation programme on social and communication skills of children with ASD	22 ASD children (9 to 11-years-old) who attended a primary school	22 children with ASD participated in several drama play-based sessions for 10 weeks	ADOS VABS Observations Interviews with parents and teachers	Children with ASD expressed enjoyment and high satisfaction in the programme. They felt limited anxiety and developed social behaviours
3. So, W., C., Wong, M.K, & Lam, Y. K. (2016). Social and communication skills predict imitation abilities in children with autism. *Frontier Education*, *1*(3), 1-9.	How an imitation programme can improve social and communication skills of children with ASD	20 ASD children (9 to 11-years-old) who attended a primary school	20 children with ASD participated in a 3 months imitation programme	VMI Imitation in six different gestures (e.g., right hand waves one at a time, with three choices goodbye, where and welcome)	The programme improved the social and communication ability of children with ASD
4. Corbett, B., Key, A., Qualls, L., Fecteau, S., Newsom, C., Coke, C., & Yoder, P. (2016). Improvement in social competence using a	How the SENSE programme can improve social and communicatio	33 children with high autism who (8 to 14-years-	Children with ASD participated in a programme (SENSE) for 10 sessions	Observation with a 5-point Likert scale SRS ABAS PIP	The SENSE programme developed the children with ASD ability to imitate

randomized trial of a theatre intervention for children with autism spectrum disorder. *Journal of Autism Developmental Disorder*, *46*, 658-672	n skills of children with ASD	old) who attended primary and secondary schools		NEPSY ERP	conventional day-to-day interactions
5. Meriano, O. (2016). *Communication skills development after a drama program for children with social-pragmatic communication difficulties.* Canada: University of British Columbia	The effect of a drama programme in social-pragmatic communicatio n skills of children with ASD	6 ASD children (6 to 9-years-old) who attended primary schools	Six children with ASD participated in InterAct drama programme for 10 weeks	Parents completed GAS CCC-2 SLDT-E	Some participants improved their thinking and emotional embodiment. No change was observed for recognition of non-social emotions
6. Deganian, E. G. (2015). *The effects of peer-led interventions, stay, play, talk, on social skills with students with autism*. Georgia College and State University, USA.	How a role-playing (“Stay, Play, Talk’’) programme has a positive effect on children with ASD	3 children with ASD (8.6 to 12.5-years-old) who attended a general school	3 children with ASD participated in a role-playing programme (“Stay, Play, Talk’’)	Observation (number of social interactions)	Children with ASD developed through the programme their social skills
7. Dogru, Y.S. (2015). The effect of creative drama on pre-teaching skills and social communication behaviors of children with autism. *Studies on Ethno Medicine*, *9*(2), 180-189	The effect of creative drama on social and communicatio n improvement of children with ASD	A girl with ASD (6-years-old) who attended primary inclusive school	A girl with ASD participated in a creative drama programme for 16 weeks	PKBS-2 was used to measure social skills and problem behaviors	The creative drama programme developed social skills to a girl with ASD
8.Wolfberg, M., DeWitt G. S. & Thanh Nguyen, Y. (2015). Integrated play groups: Promoting symbolic play and social engagement with typical peers in children with ASD	The role of IPG on social skills development of children with ASD	48 ASD children (5 to 10-years-old) who attended primary schools	48 children with ASD participated in the IPG programme for 12 weeks	Video recordings	Children with ASD have shown improvement in social play and their social behaviors

across settings. *Developmental Disorders*, *45*(3), 830-845.		and 72 typical peers			
9. Tsao, Y.L. (2014). The impact of PRT on promoting social interactions of high functioning autistic child in Taiwan. *International Journal of Educational Planning & Administration, 4*(1), 85-94	The impact of PRT on promoting social interactions of children with ASD	A child with high autism (8 –years-old) who attended primary schools and their typical peers	A child with ASD participated in a PRT programme for 15 sessions	Observation (a total number of the social interactions)	The child with ASD showed a stable improvement in her social behavior/skills and play
10. Goldingay, S., Stagnitti, K., Sheppard, L., McGillivray, J., McLean, B., & Pepin, G. (2013). An intervention to improve social participation for adolescents with autism spectrum disorder: Pilot study. *Journal Development Neurorehabilitation, 18*(2), 1-9	How a programme with music and art activities can improve the social skills of children with ASD	5 children with ASD (13.5 years-old) who attended general schools	5 children with ASD participated in a multi-intervention programme with art and music activities for 8 weeks	HASI AFT SSIS AMT	Children with ASD improved their thinking, self-regulation, empathy, and their ability to build successful and sustainable social relationships
11. Minne, E. & Sermund-Clikeman, M. (2012). A social competence intervention for young children with high functioning autism and Asperger Syndrome: a pilot Study. *Autism, 16*(6), 586-602	How the SCIPYC programme can improve the social skills of children with ASD	5 children with ASD (6 to 7-years-old) who attended primary schools	5 children with ASD participated in a SCIPYC programme for 16 sessions	Interviews with parents Observations	Children with ASD improved their social interactions during the programme. They noted improved interactions with family members, as well as with peers at schools
12. Murdock, C. L., & Hobbs, Q.J. (2011). Picture	The effect of Picture Me	12 children with ASD and 8	12 children with ASD	PPVT-4 test K-BIT test	Picture Me Playing programme was effective for

me playing: Increasing pretend play dialogue of children with autism spectrum disorders. *Journal Autism Developmental Disorders*, *41*, 870–878	Playing programme to develop social skills of children with ASD	typical peers (5 to 7-years-old) who attended primary school	participated in a story with educational materials	improving social skills in children with ASD during interactive play

* Test and Measurements per study (Interpreted below)

Test/Measures	**Interpretation**
ADOS	Autism Diagnostic Observation Schedule—a protocol which consists of a series of structured and semi-structured tasks that involve social interaction between the examiner and the subject
PPVT-4	Peabody Picture Vocabulary Test (4th Edition)—a test of receptive vocabulary achievement and verbal ability
SPA	Structured Play Assessment—videotape and code the frequency, type, and level of spontaneous play behaviours during interaction to determine highest play level mastery
VMI	Visual Motor Integration—a test for the assessment of communication between the eyes and the hands
SSIS	Social Skills Improvement System—Rating Scales which help evaluate social skills, problem behaviours, and academic competence.
ABAS	Adaptive Behaviour Assessment System—multidimensional and standardized test used to assess the functional skills necessary for daily living
PIP	Peer Interaction Paradigm—A social communication scale to predict reciprocal communication in children with ASD during natural play with peers
NEPSY	Developmental NEuroPSYchological Assessment—test which is designed to assess both basic and complex aspects of cognition critical to children's ability to learn and be productive, in and outside school settings
ERP	Event-Related Potential—measure which maps the activity of brain during several social cognitive process tasks

GAS	Goal Attainment Scaling—rating scale which evaluates the functional goal attainment of children
CCC-2	Children's Communication Checklist 2—A rating scale which rates aspects of communication, and screens for general language and pragmatic language deficits
SLDT-E	The Social Language Development Test – Elementary (SLDT-E): The SLDT-E is designed to assess the social language skills, including nonverbal communication, for elementary students aged 6.0 to 11.11
SSIS-RS	Social Skills Improvement System–Rating Scales—is designed to assist in the screening and classification of students who are suspected of presenting with social skills deficits
SRS	Social Responsiveness Scale—identifies social impairment in children with autism spectrum disorder (ASD) and quantifies its severity
PKBS	Preschool and Kindergarten Behavior Scale—a behaviour rating scale providing an integrated and functional appraisal of social skills and problem behaviours
HASI	Hayes Ability Screening Index—a screening index which indicates possible intellectual disability
AFT	Associate Fluency Tests—tests which measure flexible thinking, the ability to think of objects in different ways and to be flexible in understanding meaning
AMT	Animated Movie Test—a test scoring understanding of narrative and character
K-BIT	Kaufman Brief Intelligence Test—a test measuring verbal and nonverbal cognitive ability
VABS	Vineland Adaptive Behavior Scales—measures adaptive behaviour skills for children and adolescents up to 18 years of age. An indirect measure of gross and fine motor skills

Table 5 Categories extracted through data

Categories	Studies
Mixed measures	Chang, Shih, Landa, Kaiser, & Kasari, 2017; Corbett, Key, Qualls, Fecteau, Newsom, Coke, & Yoder, 2016; Dogru, 2015; Goldingay, Stagnitti, Sheppard, McGillivray, McLean, & Pepin, 2013; Meriano, 2016; Beadle-Brown, Wilkinson, Richardson, Shaughnessy, Trimingham, Leigh, Whelton, & Himmerich, 2017
Role-Playing technique	Corbett, Key, Qualls, Fecteau, Newsom, Coke, & Yoder, 2016; Deganian, 2015; Dogru, 2015; Meriano, 2016; Murdock, & Hobbs, 2011
Changes in social communication	Chang, Shih, Landa, Kaiser, & Kasari, 2017; So, Wong, & Lam, 2016; Dogru, 2015; Goldingay, Stagnitti, Sheppard, McGillivray, McLean, & Pepin, 2013; Murdock, & Hobbs, 2011; Beadle-Brown, Wilkinson, Richardson, Shaughnessy, Trimingham, Leigh, Whelton, & Himmerich, 2017

Mixed Measures

Looking at the majority of the papers the researchers seemed to prefer mixed methods that involve collecting, analyzing and integrating quantitative (e.g., experiments, surveys) and qualitative (e.g., focus groups, interviews) research as a way to provide a better understanding of the research problem than either of each alone. The analysis of this type of data consisted of statistically analyzing scores collected on instruments (e.g., questionnaires) checklists and test hypotheses in six studies of this research. Qualitative data consisted of open-ended information that the researcher usually gathers through interviews, focus groups, and observations (McCusker & Gunayadin, 2015). The analysis of the qualitative data (words, text, and behaviours) followed the path of aggregating it into categories of information and presenting the diversity of ideas gathered during data collection.

The systematic combination of quantitative and qualitative data was used in a number of studies investigating the social skills interactions of ASD students compared with their typical peers in the same variable which was social communication. More specifically, in Chang, Shih, Landa, Kaiser, and Kasari's (2017) research and in Murdock and Hobbs' (2011) research it is clear that the researcher used the same methodology with the same research question. They used the Peabody Picture Vocabulary Test (PPV-4) and observational techniques to evaluate the verbal ability and social communication between students with ASD and their peers during the intervention sessions. The same elements were provided in the study by D'amico, Lalonde, and Snow (2015) and in the study by Goldingay, Stagnitti, Sheppard, McGillivray, McLean, and Pepin (2013), who, in the first study, used a rating scale, (Social Skills Improvement System-Rating Scale (SSI-SR) which evaluated the social skills deficits and in the second study the Social Skills Improvement System (SSIS), a rating scale used to evaluate social skills, and problem behaviours.

The remaining two of six studies used a different instrument than the other four studies. More specifically, Corbett, Key, Qualls, Fecteau, Newsom, Coke, & Yoder, (2016) used

the Social Responsiveness Scale (SRS) to identify social deficits in the sample and Dogru (2015) used the Preschool and Kindergarten Behaviour Scale (PKBS). All of these six studies had positive results that relate to the specific theatrical playing training described, and it can be an advantage for students with ASD in developing their social skills when applied.

The Role-Playing Technique

Role-play as a technique was used in 50% percent of the studies in this systematic review. It is clear that this technique promotes effective interpersonal relations and social transactions among participants. As shown in the study by Deganian (2015), role play allowed students to explore realistic situations by interacting with their peers in a managed way so as to develop experience in a supported environment.

According to Meriano's observations (2016), students with ASD might be play a role similar to their own (or their likely one in the future) or could play the opposite part of the interaction. This situation provides the possibility for significant learning, allowing the experience to encourage the child to develop an understanding of the situation from the 'opposite' point of view. Some questions from PKBS form B, which were used to measure collaboration, interaction, and interdependence by Dogru (2015), showed that this technique has benefits for ASD students because reflects the real life as a model to their playing.

In this research, the effect of role-playing agrees with the other two studies which had the same target. In the research by Corbett et al. (2016) and Murdock and Hobbs (2011) the findings showed an important rate of development of social communication, attention skills, social interaction, social independence, and collaboration. Based on these findings, the general conclusion reached is that this technique has a positive effect on teaching social skills for students with ASD.

Changes in social communication

The purpose of these papers was to evaluate the capability of different theatrical play programmes for students with ASD and their social skills development. Social skills and theatrical play training across a great part of these studies are defined from the perspective of the theory of mind (Ordetx, 2012). The "active practice" facilitated social communication and changing perspective. It is believed that the opportunity of ASD students to dynamically engage with others in a skilled, supportive, and reciprocal manner is a key contributory element of these programs. Outcomes of theatrical play programmes were enhanced by the inclusion of typical peers.

More specifically, the studies by Corbett et al. (2016) and Wolfberg, DeWitt, and Nguyen (2015) revealed that interactions are not of the same types for the two groups of students. Students with ASD received many more social interactions than they initiated, whereas typical children made and received about the same number of social contacts. Tsao's (2014), study showed that mutual communication and social interactions between two groups (EXP-WLC) were more frequent than in only one group.

According to So, Wong, and Lam (2016), based on the results of their study, students with ASD can learn social skills and attitudes during a play, 'they learn how to be co-operative (teamwork) and be empathetic with their peers'. They can learn to express their thoughts: what they struggle with and what they are processing at the moment. They can also enhance and improve their language and communication abilities. During theatrical play sessions, the children can experience new stimuli. They can learn about the right way to ask questions and respond etc.

Table 6 Students with ASD social skills results

Studies	Pre-Post	Control	EXP	Other strengths	Other weaknesses	Conclusions
Chang, Shih, Landa, Kaiser, & Kasari (2017)	x	x	*	Sufficient number of children (58 students with ASD)	No control group	Children with ASD improved their social communicati on skills
So, Wong, & Lam (2016)	x	x	*	Simple and understandable activities-ability for improvisation	No control group, as measure is only the observation	Significant differences on social and communicati on challenges
Dogru (2015)	x	x	*	Nicely done; with a clearly explained methodology. Emphasizing specifically in social skills-behaviors		The social skills of children with ASD increased positive
Goldingay, Stagnitti, Sheppard, McGillivray, McLean, & Pepin (2013)	x	x	*	Multi-activities and great choice of measures	No control group	Children with ASD increased their ability to build sustainable
Murdock & Hobbs (2011)	x	*	*	A clearly explained methodology	There is only one story to observe the differences in selected variables	Children with ASD have shown a positive increase in social skills

Conclusion

Regarding the first research question, there is a general consensus across the studies of this review that theatrical play has developed social skills (communication, cooperation, friendship) among students with ASD, at least as measured by tests and observations. Similar results across a diversity of studies perhaps indicate the need for more longitudinal studies. Most studies do not take into account the utility of theatrical play in inclusive classes, and longer-term studies could explore the development of more specific social skills and further

potential. Moreover, it seems that theatrical play has an impact on the quality of communication, interaction, cooperation and social awareness, as there were consistent effects across the studies, with no control group. There appear to be different techniques in the ways in which theatrical play was used, with most studies indicating benefits in relation to social skills. This is partly related to the educational training. However, the potential of theatrical play can be understood through research similar to that of Corbett et al. (2016) who designed the SENSE, a structured programme which enables social interactions and communication abilities among students with ASD.

Regarding the second question, the most interesting result is related to the first question. All of the studies agree that theatrical play can be applied better by teachers who have training in these techniques, because these activities need more adaptations for students with ASD. The primary goal of teachers is cooperation with students, contacts that will bring them closer to new challenges. Another goal is to encourage students to participate in as many Acting groups as possible. Students make up a group, select a piece to work on (it may be an idea), rehearse it and finally present the outcome of this work at the Acting Groups which takes place in school.

Finally, referring to the third research question, theatre-play researchers worked to establish lines of research. Researchers in the past have not always been able to build on previous studies. Establishing a line of research affords investigators the opportunity to develop paradigms based directly on the findings from previous studies.

Conclusions of this review may not constitute a fault line in the field of research on the theatrical play, but they are exceptional because they were generated by looking systematically at an international group of studies. However, it is strongly argued here that further inquiry driven by the conclusions of this review could help the field of education field and more specifically teachers to expand their knowledge and use innovative programmes such as theatrical play to improve the social profile of students with ASD. In addition, it can offer multiple cognitive and social benefits and it can work as an interpersonal and cooperative structured activity in general primary schools.

Thus, learning is not confined to teaching situations, but is perceived as a continuous socio-cultural process in which both students with ASD and teachers have an important role of socializing. Through the theatrical play process, students' assessment by the teachers is facilitated in relation to the difficulties they face both socially and emotionally, while it is also an activating a mechanism for controlling students' progress. Thus, the dual nature of theatrical play begins to emerge, either as a specific activity within the school curriculum, or as a methodological tool in the learning process. Through these methods teaching is strengthened and enhanced, and communication among students with or without ASD and teachers' changes. In addition, cooperation and student participation improves the aesthetic formation of the course changes in a positive manner, and critical thinking, understanding of knowledge and an interdisciplinary approach to knowledge develops.

Limitations and Recommendations

Interestingly, the impact of theatrical play on social skills and specifically on communication, friendship and cooperation is totally conclusive, thus it can be suggested that it enhances the theoretical framework adopted. Offering opportunities to students with ASD to talk and elaborate enhances their social skills through social interactions with others. In this systematic review, the researchers chose to present articles which have as participants only children with ASD, and no other disabilities (either as an experimental or control group). Researchers in future studies can present and analyze numerous strategies of theatrical play and demonstrate to teachers how to reinforce the social skills of children with ASD and other disabilities so as

to engage in positive social interactions, improve self-awareness, and their feelings through specific feedback (e.g., visual cards).

In addition, theatrical play as a method should be a compulsory subject in pedagogical departments and not offered as an optional lesson. It is essential for teachers to have systematic contact with this method and necessary to attend courses/workshops to expand their knowledge.

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