



PRAXICON: INTEGRATING SENSORY, CONCEPTUAL, AND MOTOR SYSTEMS IN A NEW THERAPEUTIC MODEL FOR DEVELOPMENTAL DISABILITIES

PRAXICON: INTEGRACIJA SENZORNOG, KONCEPTUALNOG I MOTORIČKOG SISTEMA U NOVI TERAPIJSKI MODEL ZA DJECU S RAZVOJNIM TEŠKOĆAMA

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ABSTRACT

This paper describes the structure, theoretical background, and the development of Praxicon – Helping Children Build Action Foundations for Daily Functioning and Learning, a new therapeutic model developed by Veselin Medenica and Lidija Ivanović. The model is intended for children with developmental disabilities who have difficulties in imitation, symbolic gesture, and functional tool use. Praxicon, based on Roy's conceptual-productive model of praxis, integrates the key developmental theories of Vygotsky, Piaget, and Thelen into a structured intervention that targets the perceptual, conceptual, and motor systems.

The methodology for describing the intervention follows the TIDieR (Template for Intervention Description and Replication) framework to ensure transparency and replicability. The development process is further supported by the MRC Framework for Complex Interventions, with additional structuring through Intervention Mapping. A logic model depicts the expected pathways of change, linking therapeutic activities to improvements in action planning, symbolic understanding, and functional participation in everyday and school-related tasks.

Although the model has not yet been empirically tested, this article provides a comprehensive and systematic narrative of the intervention, highlighting its potential advantages, theoretical coherence, and readiness for feasibility trials. The authors also reflect critically on the model's limitations and the future steps needed for its validation and implementation.

Key words: praxis, developmental disabilities, therapeutic model, Roy's theory, imitation, intervention design.

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SAŽETAK

Ovaj rad opisuje strukturu, teorijsku osnovu i razvoj “Praxicon – Pomoć djeci u izgradnji temelja za djelovanje u svakodnevnom funkcionisanju i učenju”, novog terapijskog modela koji su razvili Veselin Medenica i Lidija Ivanović. Model je namijenjen djeci s razvojnim teškoćama koja imaju poteškoće u oponašanju, simboličkoj gesti i funkcionalnoj upotrebi predmeta. Praxicon, zasnovan na Rojevom konceptualno-produktivnom modelu praksje, integriše ključne razvojne teorije Vigotskog, Piažea i Teleni u strukturisanu intervenciju koja cilja perceptivne, konceptualne i motoričke sisteme.

Metodologija za opis intervencije prati TIDieR (Template for Intervention Description and Replication) okvir kako bi se osigurala transparentnost i mogućnost ponavljanja. Proces razvoja dodatno je podržan MRC okvirom za kompleksne intervencije, uz dodatnu strukturu kroz Intervention Mapping. Logički model prikazuje očekivane puteve promjene, povezujući terapijske aktivnosti s poboljšanjima u planiranju radnji, simboličkom razumijevanju i funkcionalnom učešću u svakodnevnim i školskim zadacima.

Iako model još nije empirijski ispitan, ovaj članak pruža sveobuhvatan i sistematski narativ intervencije, ističući njene potencijalne prednosti, teorijsku dosljednost i spremnost za ispitivanja izvodljivosti. Autori također kritički razmatraju ograničenja modela i buduće korake potrebne za njegovu validaciju i implementaciju.

Ključne riječi: praksija, razvojne teškoće, terapijski model, Rojeva teorija, oponašanje, dizajn intervencije.

INTRODUCTION

Praxis, the ability to plan and execute purposeful movements, is a key aspect of child development that connects sensory-based learning, understanding, and movement. Imitation, gesture production, and functional tool use are skills that are often difficult for children with developmental disabilities, resulting in significant impact on the child's autonomy, learning, and social participation through poor praxis. Although praxis is crucial in every aspect of our lives and affects every aspect of our functioning, it is not fully addressed or even underrepresented as a unified focus in many therapeutic frameworks.

The conceptual basis for the praxis intervention can be linked to the neuropsychological models, including the one formulated by Roy and Square (1985) in their work. According to these authors, praxis is a product of three subsystems: the sensory-perceptual system, the conceptual (ideational) system, and the production (motor execution) system (Medenica et al., 2015). This tripartite model is useful for clinicians and researchers to pinpoint particular deficits while still guaranteeing an integrative view of praxis. In the developmental perspective, such a model can be used to develop interventions that are not only targeted at the symptoms but also tailored to the child's developmental level.

It is necessary to refer to the theories of Vygotsky, Piaget, and Thelen to discuss the understanding of praxis in the context of developmental frameworks. Vygotsky (1978) highlighted the social roots of higher mental functions and for the first time introduced the concept of the zone of proximal development, which means that skills are developed best when they are assisted by other people. This framework supports the use of imitation and

practice as therapy: structured and guided towards the child's growing autonomy. In this view, Piaget (1952) expanded upon, arguing that cognitive development occurs in a series of stage-by-stage progression towards more complex processing, with sensorimotor and preoperational stages as important for the development of the symbolic function, objects, and imitation, all of which are important components of praxis. Thelen and Smith (1994) then went further to build on these views with dynamic systems theory, which explained that behavior is generated by the interaction of multiple systems and develops gradually over time rather than in a step-by-step hierarchical manner. The role of imitation and gesture use also highlights the significance of praxis in development. Goldenberg (1999) showed that injury to particular regions of the brain affects the imitation of hand positions, which proves that praxis-related processes are complex and modular.

In her 2001 review, Buxbaum demanded that ideomotor apraxia should be reconsidered and that common models should incorporate perception, cognition, and motor planning. Similarly, Gonzalez Rothi, Ochipa and Heilman (1997) suggested a cognitive neuropsychological model that dissociated conceptual and production level disorders of limb praxis. Semantically and visuomotor knowledge has to be integrated to enable meaningful action, as pointed out by Rumiati and Tessari (2002). However, very few therapeutic models have been developed based on these principles and implemented in a structured, child-friendly format. Most of the current approaches are domain oriented and are directed at either the sensory integration, fine motor skills or cognitive level, without considering the interrelationship between the mentioned aspects of praxis development. This paper presents Praxicon, a therapeutic model that was developed to help children navigate through controlled activities that impact their sensory, conceptual, and production systems in a developmentally sound manner.

The Praxicon intervention serves children who have different developmental disabilities which present with praxis impairments and difficulties using symbols and functional actions. The Praxicon intervention works with children who have autism spectrum disorder (ASD), developmental coordination disorder (DCD), intellectual disability, speech and language disorders with motor planning components (childhood apraxia of speech) and global developmental delay. Children with neurodevelopmental conditions that affect motor and cognitive systems will benefit most from this model because it addresses their challenges with imitation and gesture production and recognition and tool use and action sequencing. The Praxicon intervention provides a supplementary treatment method for children with acquired neurological conditions such as early brain injury or cerebral palsy when their praxis-related deficits prevent them from participating and learning. The model functions as an essential resource for interdisciplinary intervention planning because it unites perceptual and conceptual and motor systems in clinical and educational and therapeutic settings.

Praxicon is not a method aimed at treating isolated symptoms; rather, it offers a holistic system that supports the construction of functional, meaningful action through developmental sequencing and individualized profiling. As such, it aims to fill the gap between theoretical understanding and practical application, offering therapists a replicable and adaptable framework to support praxis, independence, learning and ADL in children with complex developmental needs.

MATERIAL AND METHODS

The methodological approach of this paper is consistent with its main objective: to introduce a new therapeutic model (Praxicon) for children with developmental disabilities. As the model is still in the developmental stage and has not been tested in clinical settings, the methodological strategy is entirely theoretical, descriptive and model-building in nature. In order to guarantee a systematic, clear and scientifically sound description of the intervention, four complementary methodological frameworks were chosen.

TIDieR – Template for Intervention Description and Replication

The TIDieR checklist (Hoffmann et al., 2014) is an internationally recognized framework designed to enhance the quality of intervention reporting, particularly in health and rehabilitation sciences. It consists of twelve structured elements that describe the name, rationale, materials, procedures, providers, delivery format, location, frequency, tailoring, modifications, and fidelity of the intervention. The primary strength of TIDieR lies in its practical orientation—it allows researchers and clinicians to replicate an intervention precisely as it was described, thus promoting transparency and comparability between studies. In the context of Praxicon, the TIDieR framework was used to provide a detailed breakdown of each component of the intervention. This includes not only what is done (e.g., pantomime, imitation, gesture recognition), but also how, by whom, in what setting, and with what degree of flexibility. This tool makes Praxicon a concrete intervention framework that is ready for future testing and clinical application rather than a vague or theoretical concept.

MRC Framework

The Medical Research Council (MRC) framework for developing and evaluating complex interventions (Craig et al., 2008) is widely adopted in healthcare research. It outlines four phases: Development, Feasibility/Piloting, Evaluation, and Implementation. This paper focuses exclusively on the Development phase, which is used when an intervention is in its initial conceptualization.

At this stage, the main objective is to establish the theoretical basis, elements, processes through which the intervention works, and how it will be delivered. It involves synthesizing existing evidence, identifying gaps in practice, and formulating the logic of the intervention. This phase does not require empirical testing, but it lays the groundwork for future research.

This framework enables Praxicon to be placed within a systematic scientific process and gives readers an understanding of how and why the model was constructed. It also ensures that the development is evidence-informed and not based solely on anecdotal experience.

Descriptive Intervention Mapping

The planning framework Intervention Mapping functions to create systematic health education and therapeutic programs (Bartholomew Eldredge et al., 2016). The process consists of multiple consecutive steps: Needs assessment; The process includes both

theoretical and empirical determinant identification; Performance objectives receive definition as part of this step; The selection process for methods and strategies begins at this point; Program development; The plan outlines both implementation procedures and evaluation protocols.

This paper implements a descriptive version of Intervention Mapping to show how the Praxicon model was developed through step-by-step intervention creation starting from recognizing developmental rehabilitation's integrated praxis intervention need to establishing specific therapeutic components and tasks. The framework enables researchers and clinicians to understand the reasoning behind intervention design choices through clear justification of each decision.

Logic Model

A simplified Logic Model based on Praxicon intervention was developed to explain its fundamental principles and predicted results. A logic model functions as a visual or narrative instrument which demonstrates how intervention inputs and activities will produce desired outcomes. The tool links academic principles to real-world practice and expected changes in functioning (Kellogg Foundation, 2004).

The logic model demonstrates how therapeutic tasks based on Roy's theory and developmental psychology (such as imitation and tool use and gesture recognition) will lead to better praxis and functional independence and communication. The model functions as a clear explanation of intervention goals and mechanisms rather than as a forecasting instrument.

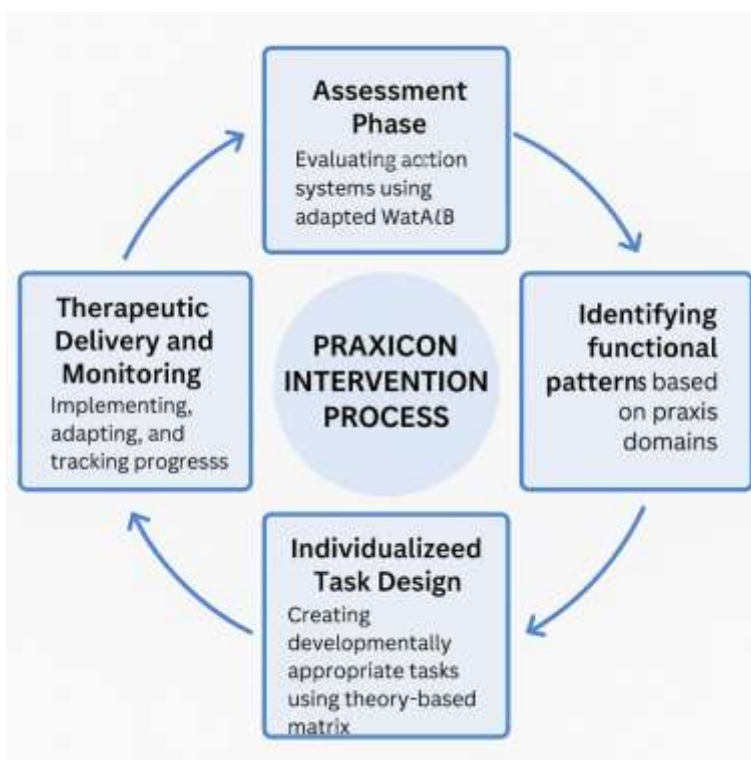
Integration of Frameworks

This paper presents Praxicon as a replicable intervention through the combination of TIDieR for detailed description, MRC for developmental rigor, Intervention Mapping for structured design, and Logic Model for theoretical coherence. The multi-layered methodology establishes a strong base for upcoming feasibility studies and clinical implementation as well as systematic evaluation of the model's effects.

RESULTS AND DISCUSSION

Detailed Description and Replicability

The development and structure of the intervention titled Praxicon – Helping Children Build Action Foundations for Daily Functioning and Learning were documented using the TIDieR (Template for Intervention Description and Replication) checklist. This internationally recognized tool includes 12 core items designed to ensure that complex interventions are described in sufficient detail to allow for accurate replication. In line with TIDieR guidelines, each of the twelve items was systematically completed, adhering strictly to the official format and content requirements. The information gathered through the checklist has been summarized below in the form of a structured narrative, providing a comprehensive overview of the intervention's rationale, components, procedures, and delivery (Graph 1.).



Graph 1. Praxicon Intervention Process

Children with developmental disabilities experience frequent challenges when planning actions and imitating behaviors and executing symbols which restricts their participation in daily routines and school activities. The intervention Praxicon exists to fill this knowledge gap by working on basic action systems including sensory-perceptual and conceptual and motor-production systems which create functional performance.

The intervention draws from Roy's conceptual-productive model of praxis and developmental theories by Vygotsky Piaget and Thelen to build up a child's ability to perceive understand and perform meaningful actions. The intervention uses pantomime and imitation and gesture recognition and tool use activities which help develop these subsystems by using suitable developmental tasks.

The systematic development of action systems through Praxicon aims to enhance functional task execution and increase student participation in academic and daily activities.

The Praxicon intervention implements multiple physical resources and informational materials to help deliver developmentally appropriate structured tasks which focus on perception and conceptual understanding and imitation and tool use.

The intervention utilizes the following materials:

- Real-life objects serve as functional tools for toothbrushes and spoons and combs and small cups.
- Visual stimuli consisting of images and video clips demonstrate gestures and everyday actions for imitation and recognition tasks.

- The nonverbal communication training uses cards containing pictorial representations of gestures.
- The symbolic play items consisting of toy phones and pretend food serve to enhance representational actions.
- The assessment and pattern profiling utilize an adapted version of the Waterloo Apraxia Battery (WatAB) alongside scoring sheets and observation forms.
- The therapist manual contains activity descriptions together with developmental sequencing and decision-making guidelines.
- The implementation of consistent delivery receives support through session templates and fidelity checklists.

The authors provide all developed materials for the Praxicon intervention which can be requested by interested parties. The open-access repository will receive a full set of example materials and session guides after pilot validation studies finish.

The Praxicon intervention follows a structured therapeutic process composed of four core phases: assessment, pattern identification, individualized task development, and implementation. The procedures are rooted in Roy's conceptual-productive model and guided by developmental principles from Vygotsky, Piaget, and Thelen.

The process begins with the administration of an adapted version of the Waterloo Apraxia Battery (WatAB), tailored to assess praxis skills in children. This assessment includes tasks in four domains:

- Pantomime (transitive and intransitive),
- Simultaneous imitation,
- Delayed imitation,
- Gesture recognition and tool function identification

Each child's performance is scored using standardized criteria (e.g., spatial accuracy, timing, amplitude, functionality). Based on these scores, the therapist generates a pattern profile across four subsystems:

P (Pantomime), CI (Concurrent Imitation), DI (Delayed Imitation), and R (Recognition), resulting in one of twelve possible functional patterns. These patterns reveal which action systems are preserved or impaired, serving as the foundation for intervention planning

.Following assessment, the therapist uses a manualized task design guide to create individualized therapeutic activities that directly target the child's deficits. Tasks are created following a structured matrix that incorporates:

- The child's profile and specific action-system deficits,
- Developmentally appropriate adaptations (e.g., simple tasks for younger children, multi-step tasks for older ones),
- Integration of theoretical principles (e.g., Vygotsky's ZPD for scaffolding, Piaget's stages for cognitive demand, and Thelen's dynamic systems for flexibility and motor adaptation)

Each therapeutic activity follows these general phases:

- Introduction and demonstration, with graded levels of prompting based on the child's ability.
- Execution phase, where the child performs or imitates the action with or without tools.
- Expansion and variation, adjusting difficulty based on performance and encouraging flexible application of skills.
- Evaluation and feedback, focusing on self-correction, motivation, and developmental progression.

Therapists monitor progress using session logs and fidelity checklists, and adapt tasks in real time based on child response. The goal is to progressively support the integration of action systems to enhance performance in daily and school-related functional tasks.

The Praxicon intervention should be delivered by professionals who have training and experience in working with children with developmental disabilities. Providers may include:

- Special educators/rehabilitation therapists (defectologists),
- Speech and language therapists,
- Occupational therapists,
- Clinical or developmental psychologists with pediatric rehabilitation experience.

The intervention providers should demonstrate a strong understanding of developmental psychology and cognitive-motor development and functional assessment of children with neurodevelopmental disorders. The delivery of structured individualized interventions requires providers to have both knowledge about praxis-related impairments (e.g., developmental dyspraxia, apraxia) and experience in implementing these interventions.

The Praxicon model requires providers to finish a specialized training module as part of their implementation. The training includes theoretical instruction about Roy's conceptual-productive model of action systems and developmental principles based on Vygotsky, Piaget and Thelen. The adapted WatAB tool requires practical training for generating functional profiles during the assessment. The five core activity types (pantomime, imitation, gesture recognition, tool use) require guided practice for their implementation. Fidelity checklists and session planning tools serve as essential components of the intervention.

The intervention needs standard therapeutic competencies but its developmental specificity and integrative structure demand that practitioners finish at least 1 semester of structured training with supervised case-based simulations. The future implementation of the intervention may need certification or endorsement for readiness from practitioners.

Children receive the Praxicon intervention mainly through direct meetings with trained providers who conduct sessions one on one. The child receives sessions according to their needs at therapeutic facilities educational centers or home environments based on their individual requirements and available resources. The individualized delivery method enables the selection of personalized tasks while allowing close observation and adaptive scaffolding which depends on the child's profile and response.

The intervention includes caregiver-led home-based activities as an additional delivery method when children need extended access to the intervention. Therapists give instructions and video models with structured materials to caregivers and assistants for home practice while providing periodic consultations either in person or through telehealth platforms.

The intervention exists for single-child application but therapists can modify specific components to work with small groups containing 2-3 children to enhance peer interaction and generalization and motivation as long as individual needs receive proper balancing.

The delivery format remains adaptable yet maintains consistency and developmental appropriateness and therapist-child interaction as essential components for successful implementation.

The Praxicon intervention should be delivered in various locations which provide one-to-one interaction between the child and therapist through structured sessions. The primary locations include:

Clinical or rehabilitation centers maintain therapy rooms that provide tables and chairs and basic therapeutic tools and sufficient lighting and space for both modeling and movement.

Special education classrooms or resource rooms within schools provide therapists with opportunities to work with children either individually or in small groups during their designated intervention periods.

Certified intervention providers operate their private practice offices for delivering this intervention.

When clinical access is restricted to the child's home location. Therapists will either visit patients at home to deliver activities or teach caregivers how to implement specific tasks in an appropriate quiet area that has been adapted for therapeutic work.

The intervention does not need any advanced equipment or technology because it uses standard tools like household items for tool-use tasks and printed cards and mobile/tablet access for video modeling. The delivery needs an environment which provides focused interaction while minimizing distractions and ensuring safe material use.

The group-based pilot versions take place in inclusive preschool rooms or developmental playgroups with structured time slots under close supervision and participant selection based on functional compatibility.

The Praxicon intervention should be delivered 2 to 4 times per week based on the child's developmental profile and availability and tolerance. The session duration amounts to 30 to 45 minutes which includes warm-up activities and core tasks (pantomime, imitation, gesture recognition) and cool-down or feedback time.

The complete intervention period lasts between 8 to 12 weeks with a total number of 16 to 36 individual sessions. A minimum of 16 intervention sessions is required to deliver adequate exposure to all five task categories. Children with complex profiles need extended intervention periods that can reach 12 weeks or 16 weeks with flexible session schedules.

The session sequence advances through levels of rising complexity. The beginning of the sessions teaches children to imitate and pantomime but the advanced sessions introduce symbolic tool use and multi-step actions and task generalization. The therapist uses WatAB profiles and observation data to determine when the child should progress to advanced task difficulty levels.

Caregivers who have children in the clinical program with less than weekly sessions might receive encouragement to practice specific activities at home. Home practice remains optional for parents but the intervention team strongly recommends its implementation to enhance generalization.

The highly individualized intervention Praxicon requires customization according to each child's action system profile. The Waterloo Apraxia Battery (WatAB) undergoes adaptation for a structured assessment which evaluates pantomime and imitation and gesture recognition performance. Therapists use assessment results to determine one of twelve achievement patterns which show how children process information through their perceptual system and conceptual system and produce motor responses.

The patterns direct therapists to choose and organize individualized tasks through a standardized framework for task development. The framework integrates principles from Roy's conceptual-productive model together with Vygotsky's zone of proximal development and Piaget's stages of symbolic development and Thelen's dynamic systems approach. Each child receives their own unique set of therapeutic activities which address their present abilities while promoting future development.

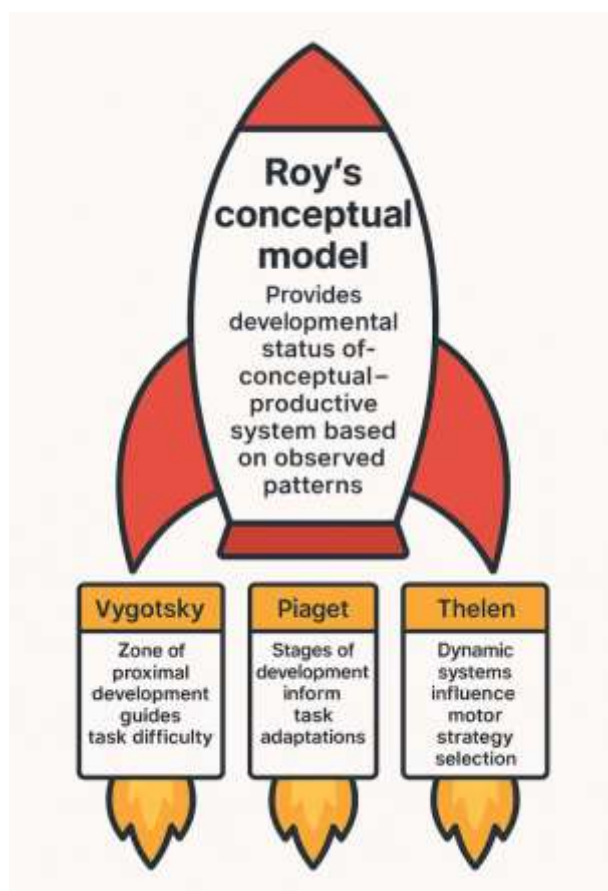
Therapists can modify tasks during sessions based on child performance and engagement and readiness by adjusting complexity levels and support methods including prompting and modeling and adding multiple sensory modalities. The intervention follows a dynamic structure because it adjusts according to the child's developing abilities and changing needs.

The Praxicon intervention used structured procedures to implement the intervention model consistently yet allowed for individual modifications. The intervention follows a standardized structure which begins with assessment then moves to pattern identification before creating individualized tasks for each child. The therapeutic process requires therapists to use specific session planning templates alongside documentation of activity types and purposes and child response and support levels. Therapists must fill out session logs and fidelity checklists to record both the implementation of planned procedures and any session modifications. The planning phase contains built-in monitoring tools which check intervention logic adherence by verifying activity alignment to pattern profiles and proper developmental progression and structural maintenance. The intervention components were designed for future fidelity assessment although third-party observation and formal scoring were not performed during development.

Theoretical Foundation and Development

The process of creating the Praxicon intervention followed established guidelines for developing complex healthcare and educational therapeutic models. The intervention development followed the Development phase of the Medical Research Council (MRC) Framework for Complex Interventions and was structured through principles of Descriptive Intervention Mapping. These frameworks offered methodological support to determine change mechanisms, create content suitable for development, and link goals with activities and expected outcomes. These methods allowed Praxicon to be both theoretically sound in neuropsychological and developmental theory and systematically organized to guide

individualized therapeutic planning and future clinical implementation. According to the MRC Framework development phase requires knowledge of the problem and its modifiable factors along with how intervention components affect results. The clinical observation led to the development of Praxicon because children with developmental disabilities show challenges in planning meaningful actions including imitation and symbolic gesture and functional tool use. These action-based impairments cause major difficulties for children to operate independently and take part in their academic work and social activities. The Praxicon model builds on the conceptual-productive system developed by Roy and Square (1985) to address these challenges. According to this neuropsychological framework praxis results from integrating three essential subsystems including sensory-perceptual input and conceptual knowledge of actions together with motor production. The three-part model provided detailed deficit identification which became the foundation for individual intervention planning. To maintain developmental applicability Praxicon incorporates three essential theoretical frameworks. The intervention tasks drew from Vygotsky's (1978) zone of proximal development to create suitable challenges which children could reach with proper assistance. The task sequencing followed Piaget's (1952) developmental framework starting from sensorimotor activities to symbolic representation of objects and gestures. Child development was approached through Thelen and Smith's (1994) dynamic systems theory which presented an emergent nonlinear process requiring flexible therapeutic adaptation (Graph 2).



Graph 2. Praxicon Theoretical Foundation

The next stage applied Descriptive Intervention Mapping to structure the development process into consecutive logical steps. The initial requirement collected data about the insufficient praxis-focused therapies and the necessity of action-based rehabilitation methods. The performance objectives included enhancing meaningful gesture imitation and symbolic tool understanding alongside independent action sequence performance.

The following phase consisted of selecting particular therapeutic approaches and methods that would accomplish the previously defined objectives. Each activity targeted specific action subsystems (perceptual conceptual or production) and included developmental variations for children. The imitation tasks developed visuomotor coordination in children while gesture recognition exercises helped them understand communicative concepts. The symbolic tool use activity combined all three systems into practical action functions.

The intervention established a flexible therapeutic framework which allows immediate modifications according to child needs but stays true to theoretical logic. The therapeutic goal of enhancing meaningful action capacity through understanding and planning connected to performing served as the overarching objective that linked to increased independence in academic and daily functioning.

The development of Praxicon combined the MRC Framework with Descriptive Intervention Mapping and developmental theories to create both a theoretically sound model and a practical individualized developmentally appropriate intervention for future clinical trials.

Logic and Expected Outcomes

The Praxicon intervention operates through a well-defined logic model (Theory of Change) which explains the expected changes in child functional abilities by connecting intervention structure with content and therapeutic reasoning. This model acts as a conceptual connection between theory and practice by explaining the sequence from inputs and activities through to behavioral and developmental observable results.

Praxicon follows a logical structure which starts with an assessment process that uses Waterloo Apraxia Battery (WatAB) to evaluate strengths and weaknesses across pantomime, concurrent imitation, delayed imitation and gesture/tool recognition action systems. The assessment results in functional pattern profiles for each child which serve as the foundation to personalize therapeutic content.

Intervention activities follow a matrix structure that integrates Roy's neuropsychological model of praxis with Vygotsky's scaffolding in the zone of proximal development as well as Piaget's stages of symbolic development and Thelen's dynamic systems theory. The customized tasks in this program activate perceptual and conceptual and motor system interactions through appropriate developmental exercises such as imitation, symbolic play and gesture interpretation and tool use.



Graph 3. Praxicon Logical Model

The intervention is predicted to produce immediate positive outcomes which include better imitation skills and enhanced ability to understand and generate symbolic gestures and better tool usage and better planning of purposeful actions. The child's capacity to carry out daily routines and communicate through action and succeed in structured educational tasks develops directly from these functional abilities gained during the intervention.

Long-term outcomes from these expected changes include better independence in activities of daily living (ADL) together with enhanced classroom and peer interaction and better learning readiness and improved motor-cognitive adaptability. The action system integration approach of Praxicon establishes a base that enables children to achieve immediate functional benefits while building foundations for future educational and social achievements.

The logic model (Graph 3) presents a well-defined hypothesis about therapeutic change that remains to be empirically validated. The model provides practitioners with a precise explanation of their intervention choices by establishing direct connections between each adaptation and developmental objective.

Positioning Praxicon Among Existing Interventions: Potential Advantages and Critical Reflections

Praxicon demonstrates multiple conceptual connections with conventional and modern therapeutic interventions that serve children with developmental disabilities while simultaneously providing new organizational approaches. Psychomotor re-education which emerged from French pedagogical methods emphasizes body movement patterns in space alongside motor coordination and body perception (Bojanin, 2006). The approach works on sensory-motor learning foundations yet does not contain the structured profiling system that

enables intervention planning in Praxicon according to Le Boulch (1992). Sensory integration therapy developed by Jean Ayres (2005) works to enhance the brain's processing ability of sensory inputs which helps create adaptive responses and daily functioning. Praxicon shares several goals with this approach since it focuses on developing postural control and fine motor skills through the vestibular proprioceptive and tactile systems (Bundy et al., 2002). The structured model of symbolic and functional action in Praxicon incorporates these processes while providing a conceptual framework beyond sensory-motor elements.

Children who have developmental challenges receive speech and language therapy that includes teaching expressive language and receptive language skills along with pragmatic communication and auditory processing (Tamaš, Marković, & Milankov, 2013). The approach rarely develops action production systems in an integrated or systematic manner for expressive language and oral motor activities (Paul & Norbury, 2012). The foundation of Praxicon rests on action comprehension and production because they provide the essential base for subsequent communication and symbolic abilities. Defectological treatment across Eastern Europe embraces diverse educational and rehabilitative methods which primarily concentrate on attention development and perception abilities and learning preparation. These established practical approaches fail to use explicit neuropsychological models that describe how movement and cognition relate during developmental changes. Praxicon connects observed behaviours to action systems using Roy's conceptual-productive system to fill this knowledge gap and direct task design and progression.

The integrative body-based method of rhythmic movement therapy (RMT) demonstrates recent development through its use of rhythmic movement patterns and reflex movements to help neurodevelopment. Both Praxicon and rhythmic movement therapy (RMT) focus on foundational action organization yet RMT operates with reduced analytical structure compared to Praxicon's defined profiles and developmental theories (Blomberg & Dempsey, 2011). The therapeutic approach of RMT lacks the formalized structure that Praxicon uses to develop its treatment plans with enhanced accuracy.

The value of Praxicon arises from the fact that it incorporates core elements of established interventions, yet maintains its theoretical base and functional structure. Praxicon benefits from its pattern profiling system that uses Roy's conceptual-productive model of praxis as a basis. Praxicon allows clinicians to assess individual child action system strengths and weaknesses for developing tailored interventions that both fit the child and follow logical developmental sequences.

The intervention has the advantage of explicit theoretical integration of developmental psychology (Vygotsky, Piaget, Thelen) that provides both flexibility and coherence to the approach. Praxicon's mechanistic approach to change, through functional behaviours and training protocols, enables clinicians to link therapeutic tasks with cognitive and perceptual motor processes. Real object use, together with imitation, and gesture work and symbolic tasks allow both the bottom-up process of sensory integration and the top-down development of concepts.

The intervention designers built features for both reproducibility and assessment purposes. The intervention includes structured checklists together with developmental profiles and

logic models which enable standardized practice across locations and create conditions for future research outcome comparisons.

The model contains built-in obstacles together with certain limitations during its operation. The extensive theoretical base of this framework presents both advantages and disadvantages because it may obstruct accessibility for practitioners who do not understand neuropsychological frameworks. Extra training and supervisory support is required for the implementation of pattern based planning alongside individualized task creation, especially when time and resources are limited. The model requires empirical validation as it exists currently only in its conceptual and developmental phase before any experimental or longitudinal study can validate its effectiveness in clinical practice.

When the model is applied too rigidly, the therapeutic interactions might become overly structured, which can decrease the spontaneity and responsiveness that play-based and relationship-centered approaches typically provide. Additional studies on implementation will assess the model's impact along with its feasibility and adaptability and acceptability in diverse clinical and cultural settings.

Praxicon represents a conceptual advancement toward creating a unified therapeutic approach for children with developmental disabilities. The model works to connect developmental neuroscience with special education and clinical practice through its combination of structured assessment and individualized planning and action-based implementation within a defined theoretical framework. The intervention focuses on building fundamental action systems because these systems serve as essential prerequisites for participation and learning as well as communication.

The model recognizes its own boundaries during the process. The model functions as an addition to other therapeutic approaches because it provides a developmental framework for interventions that do not already have one. The framework derives its value from its systematic approach and logical framework even though it has not yet proven its effectiveness. This research serves as the initial phase of an extended investigation because conceptual precision and methodological clarity need to be established before conducting empirical evaluations.

This research positions Praxicon among current therapeutic approaches while providing critical evaluation of its fundamental principles and requirements to foster interdisciplinary cooperation between therapists and educators and researchers. The research challenges professionals to consider both the effectiveness of their methods and the underlying mechanisms behind their success as well as their target population and implementation context. The practical application of models such as Praxicon depends on their ability to engage professionals in theoretical discussions which can transform their practical work.

CONCLUSION

The research delivers Praxicon as an original therapeutic approach which helps children with developmental disabilities achieve action system integration. The development of this protocol paper involved presenting both new intervention approaches and showing their conceptual structure and developmental basis and methodological reproducibility through strong evidence-based practices.

This goal required the intervention Model (Theory of Change). Evidence-based intervention development requires three frameworks which serve different functions: TIDieR enhances transparency and reproducibility and MRC supports theory-driven development while the Logic Model connects interventions to outcomes through its Theory of Change framework.

The intentional repetition of specific elements occurs throughout the sections because the methodological structure includes certain elements such as assessment and profiling followed by individualized task design and delivery. The authors chose this approach on purpose since it allowed each framework to fulfill its main function while using identical core intervention components.

The study enables deeper evaluation through its controlled repetition which shows how different frameworks produce coherent and replicable descriptions of the Praxicon intervention mechanisms and structure and purpose. Through its analysis the research demonstrates how methodological triangulation strengthens conceptual clarity and future implementation potential by evaluating both intervention content and its methodological framework.

The established approach fulfills the paper's essential goal to create a clear and developmentally appropriate intervention model which can move forward to feasibility testing and iterative refinement. Additional research needs to establish the practical success of Praxicon yet the current foundation provides strong foundations for interdisciplinary work alongside clinical practice and scientific research.

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