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SPECIAL EDUCATIONAL NEEDS OF STUDENTS WITH INTELLECTUAL DEVELOPMENT DISABILITIES AND THE PSYCHOLOGICAL-PEDAGOGICAL MECHANISMS OF DIFFERENTIATED WORK WITH THEM

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Abstract: Students with intellectual development disabilities (IDD) constitute a heterogeneous population whose meaningful participation in education depends on the timely identification and systematic accommodation of their special educational needs (SEN). This article examines the structure of these needs and analyses the psychological-pedagogical mechanisms that make differentiated instruction effective for such learners. Using a theoretical-analytical and comparative review of contemporary special-education literature and the cultural-historical tradition, the study identifies six interrelated categories of need—in pacing and cognitive load, in mediation, in curricular content, in communication, in emotional-volitional regulation, and in social participation—and maps them onto concrete differentiation mechanisms operating at the levels of content, process, product and learning environment. The analysis indicates that effective differentiated work rests on four interlocking mechanisms: diagnostic individualisation grounded in the zone of proximal development; graded mediation and scaffolding; multisensory and load-reduced content design; and the reinforcement of motivation and self-regulation through structured success. The discussion situates these mechanisms within inclusive-education policy and foregrounds the teacher’s role as mediator between the learner’s potential and actual development. It is argued that differentiation for learners with IDD is not a simplification of the curriculum but the deliberate engineering of supports that convert potential development into achieved learning.

Keywords: intellectual disability; special educational needs; differentiated instruction; zone of proximal development.

Introduction

The recognition of education as a universal right has reshaped the way schools respond to learner diversity. International instruments such as the Salamanca Statement and Article 24 of the Convention on the Rights of Persons with Disabilities affirm that children with disabilities should learn alongside their peers and that education systems, rather than the children, must adapt. For learners with intellectual development disabilities this commitment poses a particular challenge, because their difficulties are not confined to a single domain but extend across cognition, language, behaviour and adaptive functioning.

Intellectual disability is defined by significant limitations in both intellectual functioning—reasoning, problem-solving, abstract thinking and learning—and in adaptive behaviour as expressed in conceptual, social and practical skills, with onset during the developmental period. This dual criterion, common to the frameworks of the American Association on Intellectual and Developmental Disabilities, the Diagnostic and Statistical Manual of Mental Disorders and the International Classification of Diseases, replaces a purely test-score conception of disability with one that weighs the everyday supports a person requires. The population is highly heterogeneous: severity ranges from mild to profound,

support needs differ in intensity and pattern, and two learners with the same diagnostic label may present very different educational profiles.

The notion of special educational needs offers a pedagogical complement to clinical classification. Rather than describing a deficit located inside the child, it describes the additional or different provision a learner requires in order to access and progress within the curriculum. A learner has special educational needs when ordinary teaching, as it is generally organised, does not enable that learner to learn; the response is therefore an adjustment of teaching rather than the exclusion of the learner. For students with intellectual disabilities, physical presence in a classroom is a necessary but insufficient condition for learning—presence becomes participation only when instruction is differentiated to meet identified needs.

The present article addresses two connected questions. First, what is the structure of the special educational needs that characterise learners with intellectual development disabilities? Second, through which psychological-pedagogical mechanisms can differentiated instruction respond to these needs effectively? The aim is to move beyond the general claim that such learners "need differentiation" toward a clear account of which needs exist and which mechanisms address them, so that differentiated work can be planned deliberately rather than improvised.

2. Materials and Methods

This study is conceptual and employs a theoretical-analytical design rather than the collection of empirical field data. The method consisted of a structured review and comparative analysis of three bodies of source material. The first comprised authoritative definitional and classificatory frameworks for intellectual disability, namely the systems of the American Association on Intellectual and Developmental Disabilities, the fifth edition of the Diagnostic and Statistical Manual of Mental Disorders, and the eleventh revision of the International Classification of Diseases. The second comprised the cultural-historical and defectological tradition, principally the works of L. S. Vygotsky on the zone of proximal development, mediation, and the distinction between primary and secondary defect. The third comprised contemporary pedagogical scholarship on differentiated instruction and inclusive design, including the work of C. A. Tomlinson and the Universal Design for Learning guidelines.

The analytical procedure unfolded in three steps. In the first step, recurring descriptions of the learning characteristics of students with intellectual disabilities were extracted from the sources and grouped into thematic categories of need. In the second step, established mechanisms of differentiation were identified and organised according to the dimensions along which teaching can be varied—content, process, product and learning environment. In the third step, the categories of need were mapped onto the mechanisms of differentiation, producing an explicit correspondence between what these learners require and how teaching can supply it. Because the study is theoretical, its claims are offered as a synthesised framework whose value lies in coherence and practical applicability rather than in statistical generalisation, and this is acknowledged as a limitation in the discussion.

Results

3.1. The structure of special educational needs

The analysis yielded six interrelated categories of special educational need that recur across the literature on learners with intellectual development disabilities. They are presented separately for clarity, but in practice they overlap and reinforce one another.

Needs in pacing and cognitive load arise from a slower rate of information processing, a smaller working-memory capacity, and difficulty in attending selectively to relevant stimuli.

Such learners require more time, fewer simultaneous demands, and information delivered in smaller and more clearly bounded units.

Needs in mediation reflect difficulty in moving independently from the concrete to the abstract and in transferring a skill from one situation to another. These learners depend on an adult or a more capable peer to bridge the gap between what they can do alone and what they can do with assistance, and on the deliberate teaching of generalisation rather than the assumption that it will occur spontaneously.

Needs in curricular content concern what is taught and how it is represented. The curriculum frequently requires adjustment of its breadth, depth and level of abstraction, together with the inclusion of functional and life-skill objectives that have direct adaptive value. Content is best presented through multiple sensory channels rather than through language alone.

Needs in communication stem from limitations in receptive and expressive language that can mask a learner's actual understanding and intentions. Simplified and explicit language, visual supports, and, where appropriate, augmentative and alternative communication are required so that the demands of language do not become a barrier to demonstrating learning.

Needs in emotional-volitional regulation arise because repeated experience of failure tends to depress motivation and to foster learned helplessness and a passive, externally directed stance toward tasks. These learners require predictable structure, frequent and tangible success, and the gradual development of self-regulation and goal-directed effort.

Needs in social participation concern belonging and the acquisition of social-adaptive skills. Inclusion in shared activity, the explicit teaching of social conventions, and protection from isolation and stigmatisation are necessary if the social environment is to become a resource for development rather than a source of secondary difficulty.

3.2. Dimensions and mechanisms of differentiation

Differentiation is most usefully understood as the systematic variation of teaching along four dimensions. Content differentiation varies what is learned and how it is represented, for example by reducing the number of objectives, replacing abstract material with concrete equivalents, and offering text, image and manipulative versions of the same idea. Process differentiation varies how learners engage with content, through scaffolding, additional time, demonstration and guided practice, flexible grouping and step-by-step task analysis. Product differentiation varies how learning is demonstrated, allowing oral, practical or visual responses in place of extended writing and adjusting the criteria for success to the individual. Environment differentiation varies the physical and psychological setting, through structured routines, reduction of distraction, visual organisers and a supportive emotional climate.

Cutting across these dimensions, the synthesis identified four core psychological-pedagogical mechanisms through which differentiation produces its effect. The first is diagnostic individualisation grounded in the zone of proximal development: instruction is calibrated not to what the learner can already do unaided but to what the learner can do with assistance, so that tasks remain achievable yet developmental. The second is graded mediation and scaffolding: the teacher supplies external support—prompts, models, partially completed tasks—that is progressively withdrawn as competence grows, transferring control of the activity from teacher to learner. The third is multisensory and load-reduced content design: information is segmented, presented through several channels, and stripped of extraneous demand so that limited processing capacity is devoted to what matters. The fourth is the reinforcement of motivation and self-regulation through structured success: tasks are

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arranged so that effort reliably produces visible achievement, which counteracts learned helplessness and gradually builds the learner's capacity to direct their own activity.

3.3. Correspondence between needs and mechanisms

Mapping the categories of need onto the mechanisms of differentiation produced the correspondences summarised in Table 1. The table shows that no single mechanism addresses all needs and that the mechanisms operate in combination: a well-differentiated lesson typically deploys several at once.

Table 1. Correspondence between special educational needs and mechanisms of differentiation.

Category of special educational need	Primary differentiation dimension	Core mechanism(s) engaged
Pacing and cognitive load	Process; environment	Multisensory and load-reduced design; diagnostic individualisation
Mediation and transfer	Process	Graded mediation and scaffolding; zone of proximal development
Curricular content	Content	Multisensory and load-reduced design; diagnostic individualisation
Communication	Content; product	Multisensory and load-reduced design; scaffolding
Emotional-volitional regulation	Environment; product	Reinforcement through structured success
Social participation	Environment; process	Graded mediation; reinforcement through structured success

4. Discussion

The framework developed above acquires its theoretical justification from the cultural-historical tradition. Vygotsky's distinction between the primary defect—the biologically rooted impairment—and the secondary defect—the social and psychological consequences that grow from it—reframes the educational task. The primary limitation in intellectual functioning may not be removable, but the secondary consequences, such as learned helplessness, restricted experience and exclusion from shared activity, are largely produced by the environment and are therefore open to pedagogical intervention. Differentiation, on this reading, is a means of preventing secondary defect: by adjusting demands and supplying mediation, the teacher stops a learner's difficulties from compounding into avoidable disadvantage.

The concept of the zone of proximal development gives the mechanisms their operative logic. Development, in this view, is led rather than merely followed by instruction; what a learner can do today with assistance becomes what the learner can do tomorrow alone. Diagnostic individualisation and scaffolding are precisely the techniques for working in this zone, while the structured arrangement of success addresses the motivational conditions under which a learner is willing to attempt the assisted task at all. Differentiation thus integrates the cognitive and the affective: a task pitched correctly in the cognitive sense will still fail if repeated past experience has taught the learner not to try.

A central implication is that differentiation must be distinguished sharply from the simplification or dilution of the curriculum. To lower expectations and ask less of a learner is not to differentiate; it is to withdraw the very challenge through which development occurs. Genuine differentiation keeps the learning goal ambitious while engineering the route to it—altering representation, support, pacing and mode of response so that a demanding objective

becomes reachable. The teacher's role is correspondingly redefined as that of a mediator who diagnoses the zone of proximal development, supplies and then withdraws support, and orchestrates the environment, rather than as a transmitter of uniform content.

Realising this role depends on conditions beyond the individual lesson. Effective differentiated work for learners with intellectual disabilities is associated with individualised education programmes that translate identified needs into measurable objectives, with collaboration among teachers, special educators, psychologists, speech and language specialists and families, and with continuous formative assessment that adjusts supports as competence changes. It is also constrained by well-documented obstacles: large classes, limited preparation time, gaps in teacher training, and scarce specialist resources. These constraints do not invalidate the framework, but they explain why differentiation often remains aspirational and why systemic investment in teacher preparation and support services is a precondition for its success.

The principal limitation of the present study follows from its design. As a theoretical synthesis it integrates existing knowledge into a coherent framework but does not itself test that framework against classroom outcomes. The categories of need and the mechanisms of differentiation are well grounded in the literature, yet their relative effectiveness, their interaction, and their applicability across different severities of intellectual disability and different educational settings are empirical questions. Future research should examine the framework through classroom-based and intervention studies, ideally within the local context of inclusive education, so that the correspondence proposed here can be refined and validated.

5. Conclusion

Students with intellectual development disabilities present a structured set of special educational needs that span pacing and cognitive load, mediation, curricular content, communication, emotional-volitional regulation and social participation. These needs can be met through differentiation along the dimensions of content, process, product and environment, animated by four psychological-pedagogical mechanisms: diagnostic individualisation grounded in the zone of proximal development, graded mediation and scaffolding, multisensory and load-reduced content design, and the reinforcement of motivation and self-regulation through structured success.

The decisive conclusion is conceptual as much as practical. Differentiated work with these learners is not the lowering of expectations but the deliberate engineering of supports that converts potential development into achieved learning. Where the teacher acts as a mediator within the zone of proximal development, and where the school provides the individualised planning, collaboration and assessment that such work requires, presence in the classroom can become genuine participation. Strengthening teacher preparation in these mechanisms therefore emerges as the most direct way to improve educational outcomes for students with intellectual disabilities and to give substance to the promise of inclusive education.

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