International Journal of Intellectual Disability

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Adapting teaching strategies to empower learners with intellectual disabilities in inclusive environment

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Abstract
This comprehensive review explores the multifaceted landscape of tailoring instructional approaches to adapt teaching strategies for learners with intellectual disabilities. The study delves into the intricate construct of intellectual disability, considering not only individual limitations but also cultural influences, societal attitudes, and support systems. Assessment and diagnosis are pivotal in understanding and supporting learners, necessitating a thorough clinical approach considering risk factors, family impact, and mental health. Adapting instructional methods is explored through addressing teacher attitudes, employing evidence-based practices, and utilising varied instructional strategies to meet diverse needs. Creating a supportive learning environment is discussed in the context of collaboration between stakeholders, inclusive policies, and the integration of technological resources. Positive relationships and behavioural challenges are highlighted, emphasising the importance of understanding factors influencing relationships and adopting a multidimensional approach to intervention. The abstract concludes by underscoring the dynamic nature of tailoring instructional approaches, emphasising continuous adaptation, collaboration, and a profound understanding of the unique needs of each learner with intellectual disabilities. This commitment aims to empower these individuals for growth, development, and meaningful social participation.

Keywords: Empower, intellectual disability, learners, teaching strategies

Introduction
Intellectual disability (ID) is a multifaceted construct encompassing intellectual functioning and adaptive behaviour limitations. Learners with ID have significant cognitive impairments and adaptive behaviour limitations, including conceptual, social, and practical adaptive skills (Flack *et al*., 2022; Jacob *et al*., 2022a; Schalock *et al*., 2021; Wehmeyer *et al*., 2008) [40, 24, 65, 75]. A state of cognitive functioning associated with ID can be described as the relationship between individual capacities and limitations and the demands and support provided by the environment (Garrels, 2021) [26]. Learners with ID are vulnerable to exploitation and stigmatisation, and their parenting abilities often attract negative attention due to the perception of their limited capacities to parent (Courtenay & Perera, 2020; Llewellyn & Hindmarsh, 2015; Dorozenko *et al*., 2015) [17, 49, 22].

Adams *et al*. (2019) [1] opined that individuals with ID may face challenges in understanding and managing their prescription medications, highlighting the need for accessible and tailored information to meet legal and best practice standards. According to Tassé *et al*. (2012) [70], the construct of ID is influenced by cultural relativity and the social construction of disability, which impacts how it is understood internationally. Additionally, the understanding of ID is not limited to the individual but also involves the perceptions and experiences of their families and caregivers and broader societal attitudes and support systems (Aldersey, 2012; Chou *et al*., 2006; Lewis, 2015) [2, 13, 47]. The quality of life of individuals with ID and their families, based on the opinion of Verma and Kishore (2009) [74] and Chou *et al*. (2006) [13], is a subject of substantial literature, reflecting the importance of addressing their needs and providing appropriate support.

Intellectual disability is a complex and evolving construct that goes beyond individual limitations and encompasses societal attitudes, cultural influences, and support systems. Understanding and addressing the needs of individuals with ID requires a comprehensive approach that considers their intellectual functioning, adaptive behaviours, and the broader social and cultural context in which they live. Effective teaching for learners with ID is crucial for their academic and social development.

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Courtade *et al*. (2014) [16] reported that research has shown that instructional practices play a significant role in educating individuals with ID. Kodak *et al*. (2016) [44] contended that effective instruction involves various components, including materials presented, opportunities for participants to respond, reinforcement for correct responses, and feedback or correction for incorrect responses.

Furthermore, it has been demonstrated that implementing evidence-based practices, including the utilisation of constant time delay in providing instruction, has significantly enhanced the acquisition of academic material by students with ID ranging from moderate to severe (Hudson *et al*., 2013) [37]. In addition, teachers' disposition and intentions towards teaching students with special educational needs, including those with ID, impact the implementation of appropriate pedagogical approaches (Batsiou *et al*., 2008) [7]. Developing instructional strategies should consider the specific needs of learners with ID. For instance, cognitive-based instruction facilitates problem-solving skills for students with mild ID (Chung & Tam, 2005) [14]. A comprehensive educational programme with appropriate instructional strategies and materials can support literacy skills development among learners with ID (Sari *et al*., 2018) [64].

According to Morgan and Moni (2008) [52], real-world interactions and relevant activities are crucial for motivating and engaging learners in the learning process. It is essential to consider the impact of teachers' attitudes and beliefs on students in an inclusive learning environment. Evidence shows that explicit and implicit teacher beliefs can influence inclusive learning, highlighting the importance of addressing teachers' attitudes and self-efficacy towards children with ID (Wilson *et al*., 2019) [77].

Assessment and Diagnosis of Learners with ID
Several factors must be considered when assessing and diagnosing learners with ID. These factors include prenatal, perinatal, and neonatal risk factors, clinical assessment, and the impact on family members. Huang *et al*. (2016) [36] identified potential causal factors for ID during prenatal, perinatal, and neonatal development. Hence, it is imperative to understand developmental disabilities and their associated risk factors. provide a clinical primer on ID, emphasising the need for a comprehensive assessment of cognitive and adaptive abilities by qualified professionals for an accurate diagnosis (Patel *et al*., 2020) [59]. This underscores the significance of a thorough clinical assessment in diagnosing ID. Brennan *et al*. (2020) [9] conducted a systematic review of future planning for family care of adults with ID, emphasising the need for structured models/frameworks for future care planning.

This highlights the importance of considering the long-term impact of ID on family members and the necessity for comprehensive future planning. Additionally, a study on siblings of adults with developmental disabilities reveals the pervasive impact on the life decisions of siblings, emphasising the need for support and understanding for family members (Heller & Arnold, 2010) [33]. Mental health implications for learners with ID should also be considered. Researchers found that there is a need for education and skill development in mental health services for the assessment of psychiatric disorders in individuals with ID (Naveed, 2019) [55]. This highlights the importance of addressing mental health concerns among individuals with

ID. Cooney *et al*. (2017) [15] conducted a randomised controlled trial examining cognitive-behavioural therapy for adults with ID. The findings support the importance of addressing psychological wellness in this population through tailored interventions.

Adapting Instructional Methods for Learners with ID
The nature of a learner's disability may influence how teachers view inclusive education since learners with severe or multiple disabilities require more individualised instruction and significant modifications to curricula (Donohue & Bornman, 2015) [21]. It has been proposed that Universal Design for Learning (UDL) can provide a flexible developmental environment for integrated education that addresses students' learning differences. Various interventions have been used to optimise teaching effectiveness for learners with disabilities, including assistive and instructional technologies, peer tutoring, storytelling, cooperative learning, and the teaching of metacognitive strategies (Hornby, 2015; Jacob *et al*., 2022b; Jacob *et al*., 2021) [35, 41-42]. Programs such as the Teacher Empowerment for Disability Inclusion (TEDI) have enabled quality education for learners with intellectual and developmental disabilities by empowering and recognising teachers (Vergunst *et al*., 2021) [73]. Malki and Einat (2017) [50] state that limited teacher abilities are major obstacles to implementing inclusive education policies for pupils with ID.

Studies have shown that individuals with intellectual disabilities (ID) are more likely to enhance their language and literacy skills if they receive appropriate teaching and learning strategies to support their literacy education (Young *et al*., 2004; Moni & Jobling, 2013) [78, 51]. Multimedia applications, such as Multimedia in Education for Special Education (MESE), have improved reading ability and memorisation for children with ID (Munir *et al*., 2018) [54]. It is essential to address the attitudes and perceptions of teachers and head teachers towards the inclusion of learners with ID, as these attitudes can significantly impact the effectiveness of inclusive education (Ruteere *et al*., 2021; Ojok & Wormnæs, 2013) [62, 57]. According to Annie and Muvombo (2019) [5], students believe that inclusive education can be improved through awareness campaigns, additional learning materials, infrastructure modification, existing teaching methods, and positive language towards learners with disabilities.

Instructional strategies and approaches can be employed to provide differentiated instruction for learners with ID. Research has shown that learners with ID can benefit from student-directed learning models (Garrels, 2018) [25], phonics-based instruction, music therapy, multimedia applications, and pictorial illustrations (Jacob & Pillay, 2022) [39]. The effectiveness of direct instruction techniques, such as constant time delay, in teaching reading to students with ID has been highlighted (Alnahdi, 2015) [4]. It is important to note that including learners with ID in mainstream classrooms can be challenging for teachers. Therefore, providing professional development opportunities for teachers to enhance their attitudes towards inclusion and equip them with the necessary skills to support the diverse needs of learners with ID is crucial.

Parental involvement is crucial in meeting the needs of students with intellectual disabilities (ID). Furthermore, studying the lived experiences of parents of learners with ID

can provide valuable insights for educators and other stakeholders in understanding the challenges and coping mechanisms associated with raising a child with an ID. Additionally, the role of head teachers in providing appropriate instructional supervision skills for teaching adaptive skills to learners with ID has been highlighted as a crucial factor in enhancing the effectiveness of educational interventions for these learners.

Creating a Supportive Learning Environment for Learners with ID

A supportive learning environment is crucial for the educational and personal development of learners with ID, which can be achieved through inclusive education. Inclusive education is vital for students with ID, as failures in its implementation can perpetuate segregated schooling and disadvantage these students (Buchner et al., 2020) [10]. Including students with disabilities in higher education programs is gaining traction, highlighting the importance of creating an inclusive environment for these students (Kubiak et al., 2021) [46]. It can be challenging to select and implement effective instructional techniques for learners with severe intellectual and developmental disabilities due to their highly intensive and variable learning needs (Courtade et al., 2014) [16].

Obtaining informed consent for research studies involving individuals with ID requires patience, sincerity, and flexibility to overcome barriers and build trust and respect between researchers, individuals with ID, and their support networks (Ho et al., 2018) [34]. According to Salinas and Tiamzon (2022) [63], knowledge of the lived experiences of parents of learners with ID can help develop effective strategies for assisting these students. Although television programming about ID does not influence learners' participation in inclusive education, Lidubwi et al. (2023) [48] emphasise the necessity for a more comprehensive support system for learners with ID. A study conducted by Mosito et al. (2017) [53] found that technology can enhance the reading abilities of learners with ID. Technology can enhance effective learning among learners with ID.

Positive treatment of learners with disabilities, a modified curriculum, and more resources are essential for successful inclusion in educational settings (Annie & Muvombo, 2019) [5]. Primary school teachers have shown slightly more positive attitudes than negative attitudes and a greater tendency to teach learners with ID (Ojok & Wormnæs, 2013) [57]. This indicates the potential for a significant change in attitudes towards inclusive education. Understanding the teaching and learning process for learners with ID is crucial for adapting educational systems to meet their needs (Infantri & Lintangsari, 2022) [38]. Promoting a supportive learning climate and autonomy can enhance learner engagement and self-regulated learning strategies (Kubiak, 2015) [45].

Support services offered to parents of learners with ID can significantly impact their perceptions and expectations of their children's future, highlighting the importance of ongoing support for parents (Sefotho et al., 2021) [67]. Negative attitudes toward persons with disabilities may lead to low expectations and reduced learning opportunities, emphasising the need to address and change these attitudes (Chhabra et al., 2009) [12]. Postsecondary education for people with ID can improve their chances of employment and create a more satisfying life, underscoring the

importance of inclusive postsecondary education programs (O'Connor et al., 2012) [56]. Effective educational and work readiness programs have demonstrated utility for people with ID, emphasising the potential for innovative programs to support their transition to work (Shevlin et al., 2020) [68].

Building positive relationships for learners with ID

Research has shown that increased specific educational training for ID is associated with more positive attitudes and emotions among caregivers (Desroches et al., 2019) [19]. Additionally, positive sibling relationship quality has been linked to better outcomes for individuals with intellectual and developmental disabilities (Williams et al., 2022) [76]. Furthermore, collaborative efforts between parents, teachers, disability experts, and healthcare providers benefit adolescents with ID (Aderemi et al., 2013). Several programs are available to help learners with ID increase their self-esteem, confidence, interpersonal relationships, self-determination, social inclusion, and employment prospects (Kubiak et al., 2021) [46]. Moreover, inclusive educational settings are crucial in shaping students' attitudes towards their peers with ID (Rillotta & Nettelbeck, 2007) [61]. Teachers' attitudes towards the participation of learners with ID are influenced by their teaching experience and professional development (Avramidis & Kalyva, 2007) [6].

It is crucial to involve parents and teachers in the education of learners with intellectual disabilities. This can be achieved through improved support structures and better dissemination of knowledge and skills in this area (Stephinah, 2014) [69]. It is crucial to understand the relationship between motor skills, physical activity, and self-concept in learners with intellectual disabilities. Furthermore, it is important to examine the impact of physical and motor skills on these children's self-concept (Schluchter et al., 2021) [66]. Additionally, the role of caregivers, particularly adult siblings, is significant, as they are expected to assume greater caregiving responsibility based on factors such as gender, proximity, and the quality of their relationship with an individual with ID (Burke et al., 2012) [11].

Addressing Behavioural Challenges among Learners with ID

It is essential to provide educators and caregivers with a comprehensive understanding of how learners with ID behave. Additionally, understanding the impact of their responses on their behaviour will help develop appropriate interventions. According to Hastings and Brown (2002) [31], staff's emotional reactions to challenging behaviours are affected by their understanding of behavioural knowledge, causal beliefs, and perceived self-efficacy. Furthermore, challenging behaviours may prevent a person from being discharged from associating with community members, thus emphasising the importance of effective interventions (Boer & Iyer, 2020) [8]. Interaction dynamics have been understood by observing individuals with challenging behaviours (Guikas & Morin, 2021) [28]. Ali et al. (2014) [3] reported that interventions for challenging behaviours in individuals with ID have been a focus of research, with a meta-analytic study highlighting the prevalence of self-injurious, stereotypical, and aggressive behaviours.

In addition, Grey et al. (2006) [27] have identified staff training as a critical factor in improving quality of life and reducing challenging behaviours. Staff perceptions and

attributions regarding the causes of challenging behaviour are significantly influenced by their cognitive and emotional responses, which are crucial when dealing with challenging behaviours (Tierney *et al*., 2006; Dilworth *et al*., 2010; Poppes *et al*., 2016; Hastings, 1997; Hastings *et al*., 1995) [71, 20, 60, 30, 29, 32]. The severity of challenging behaviours and their impact on individuals with ID has been assessed through psychometric measures, highlighting the need for a comprehensive understanding of impact dimensions (Oliver *et al*., 2003) [58]. Moreover, the implementation of community care has necessitated services to meet the needs of adults with ID and additional needs related to challenging behaviours (Joyce *et al*., 2001) [43]. Care staff responses to challenging behaviours have been analysed from a cognitive-emotional perspective, providing insights into applying cognitive-emotional models of helping behaviours (Dagnan *et al*., 1998; Hastings, 1995) [18, 29, 32].

Finally, the persistence of challenging behaviours in adults with ID and the long-term effects of behavioural interventions on children with severely challenging behaviours have been studied, emphasising the need for sustained support and interventions (Totsika *et al*., 2008; Emerson *et al*., 1996) [72, 23]. These findings underscore the complexity of addressing challenging behaviours among learners with ID and the importance of considering multifaceted interventions and support systems.

Conclusion

Tailoring instructional approaches for learners with ID is a multifaceted endeavour that demands a comprehensive understanding of the individual and their unique needs within the broader societal context. It is imperative to prioritise a thorough assessment process, considering prenatal and perinatal risk, clinical evaluation, family impact, and mental health. This calls for the involvement of qualified professionals skilled in cognitive and adaptive ability evaluation to ensure accurate diagnosis and ongoing support. Adapting instructional methods is crucial, involving strategies like Universal Design for Learning (UDL, assistive technologies, peer tutoring and metacognitive approaches. Ongoing professional development for educators becomes pivotal, enhancing their capacity to cater to the diverse needs of learners with ID.

Creating a supportive learning environment necessitates collaboration between parents, teachers, disability experts and healthcare providers. Inclusive education and technological interventions are highlighted for their positive impact on the learning experiences of individuals with ID. Building positive relationships emerges as a key element, acknowledging the influence of such connections on emotional, social, and academic development. Targeted training for caregivers, fostering supportive sibling relationships and collaborative effort among stakeholders contribute significantly to this aspect. Addressing behavioural challenges requires a nuanced and comprehensive approach.

Staff training, understanding the cognitive and emotional factors influencing responses, and continuous assessment of behaviour impact are emphasised for effective intervention strategies. In implementing these recommendations, a holistic and inclusive approach is paramount. This involves considering the diverse needs of individuals with ID and engaging all relevant stakeholders, including parents, educators, and healthcare professionals. Furthermore, ongoing research, collaboration, and professional development are integral to continuously enhancing and adapting instructional approaches to empower learners with ID.

Recommendations

Adapting teaching strategies to empower learners with ID in inclusive environments is a multifaceted endeavour that demands a comprehensive understanding of the individual and their unique needs within the broader societal context. The methods involve promoting evidence-based practices tailored to the needs of learners with ID. Positive teacher attitudes towards inclusive education, achieved through professional development and awareness campaigns, are essential. Collaboration between parents, teachers, disability experts, and healthcare providers is pivotal, requiring ongoing professional development for educators to support diverse learners effectively.

Advocating for inclusive education policies and integrating assistive technologies, peer tutoring, and cooperative learning are essential in creating a supportive learning environment. A critical component of inclusive education policies addresses challenges such as insufficient inclusion hours and limited mainstream teacher abilities. Continuous adaptation and collaboration underscore the dynamic nature of tailoring instructional approaches, requiring ongoing research, collaboration among stakeholders, and professional development to empower learners with ID comprehensively.

References

1. Adams D, Carr C, Mengoni S. Do people with intellectual disabilities understand their prescription medication? a scoping review. Journal of Applied Research in Intellectual Disabilities. 2019;32(6):1375-1388. doi:10.1111/jar.12643
2. Aldersey H. Family perceptions of intellectual disability: understanding and support in Dar es Salaam. African Journal of Disability. 2012;1(1). doi:10.4102/ajod.v1i1.32
3. Ali A, Blickwedel J, Hassiotis A. Interventions for challenging behaviour in intellectual disability. Advances in Psychiatric Treatment. 2014;20(3):184-192. doi:10.1192/apt.bp.113.011577
4. Alnahdi G. Teaching reading for students with intellectual disabilities: a systematic review. International Education Studies. 2015;8(9). doi:10.5539/ies.v8n9p79
5. Annie P, Muvombo M. Views of students on the inclusion of learners with disabilities. International Journal of Research - Grantha Aalayah. 2019;7(3):142-147. doi:10.29121/granthaalayah.v7.i3.2019.954
6. Avramidis E, Kalyva E. The influence of teaching experience and professional development on Greek teachers' attitudes towards inclusion. European Journal of Special Needs Education. 2007;22(4):367-389. doi:10.1080/08856250701649989
7. Batsiou S, Bebetsos E, Panteli P, Antoniou P. Attitudes and intention of Greek and Cypriot primary education teachers towards teaching pupils with special educational needs in mainstream schools. International Journal of Inclusive Education. 2008;12(2):201-219. doi:10.1080/13603110600855739
8. Boer H, Iyer A. Challenging behaviour and offending

behaviours. Tizard Learning Disability Review. 2020;25(3):117-124. doi:10.1108/tldr-04-2020-0005

9. Brennan D, McCausland D, O'Donovan M, Eustace-Cook J, McCallion P, McCarron M. Approaches to and outcomes of future planning for family carers of adults with an intellectual disability: a systematic review. Journal of Applied Research in Intellectual Disabilities. 2020;33(6):1221-1233. doi:10.1111/jar.12742

10. Buchner T, Shevlin M, Donovan M, *et al*. Same progress for all? inclusive education, the United Nations convention on the rights of persons with disabilities and students with intellectual disability in European countries. Journal of Policy and Practice in Intellectual Disabilities. 2020;18(1):7-22. doi:10.1111/jppi.12368

11. Burke M, Taylor J, Urbano R, Hodapp R. Predictors of future caregiving by adult siblings of individuals with intellectual and developmental disabilities. American Journal on Intellectual and Developmental Disabilities. 2012;117(1):33-47. doi:10.1352/1944-7558-117.1.33

12. Chhabra S, Srivastava R, Srivastava I. Inclusive education in Botswana: the perceptions of schoolteachers. Journal of Disability Policy Studies. 2009;20(4):219-228. doi:10.1177/1044207309344690

13. Chou Y, Li L, Chang A, Schalock R. The quality of life of family caregivers of adults with intellectual disabilities in Taiwan. Journal of Applied Research in Intellectual Disabilities. 2006;20(3):200–210. doi:10.1111/j.1468-3148.2006.00318.x

14. Chung K, Tam Y. Effects of cognitive-based instruction on mathematical problem solving by learners with mild intellectual disabilities. Journal of Intellectual & Developmental Disability. 2005;30(4):207-216. doi:10.1080/13668250500349409

15. Cooney P, Jackman C, Coyle D, O'Reilly G. Computerised cognitive–behavioural therapy for adults with intellectual disability: randomised controlled trial. The British Journal of Psychiatry. 2017;211(2):95–102. doi:10.1192/bjp.bp.117.198630

16. Courtade G, Test D, Cook B. Evidence-based practices for learners with severe intellectual disability. Research and Practice for Persons with Severe Disabilities. 2014;39(4):305-318. doi:10.1177/1540796914566711

17. Courtenay K, Perera B. Covid-19 and people with intellectual disability: impacts of a pandemic. Irish Journal of Psychological Medicine. 2020;37(3):231-236. doi:10.1017/ipm.2020.45

18. Dagnan D, Trower P, Smith R. Care staff responses to people with learning disabilities and challenging behaviour: a cognitive—emotional analysis. British Journal of Clinical Psychology. 1998;37(1):59–68. doi:10.1111/j.2044-8260.1998.tb01279.x

19. Desroches M, Sethares K, Curtin C, Chung W. Nurses' attitudes and emotions toward caring for adults with intellectual disabilities: results of a cross-sectional, correlational-predictive research study. Journal of Applied Research in Intellectual Disabilities. 2019;32(6):1501-1513. doi:10.1111/jar.12645

20. Dilworth J, Phillips N, Rose J. Factors relating to staff attributions of control over challenging behaviour. Journal of Applied Research in Intellectual Disabilities. 2010;24(1):29-38. doi:10.1111/j.1468-3148.2010.00570.x

21. Donohue D, Bornman J. South African teachers' attitudes toward the inclusion of learners with different abilities in mainstream classrooms. International Journal of Disability Development and Education. 2015;62(1):42-59. doi:10.1080/1034912x.2014.985638

22. Dorozenko K, Roberts L, Bishop B. Imposed identities and limited opportunities. Journal of Intellectual Disabilities. 2015;19(3):282-299. doi:10.1177/1744629515574210

23. Emerson E, Robertson J, Fowler S, Letchford S, Jones M. The long-term effects of behavioural residential special education on children with severely challenging behaviours: changes in behaviour and skills. Journal of Applied Research in Intellectual Disabilities. 1996;9(3):240-255. doi:10.1111/j.1468-3148.1996.tb00113.x

24. Flack D, Fishel S, Wiltsie K, Kudatzky A, DeMatteo D. Following up after Moore and hall: a national survey of state legislation defining intellectual disability. Psychology Public Policy and Law. 2022;28(4):459-478. doi:10.1037/law0000372

25. Garrels V. Student-directed learning of literacy skills for students with intellectual disability. Journal of Research in Special Educational Needs. 2018;19(3):197-206. https://doi.org/10.1111/1471-3802.12442

26. Garrels V. Considering the boundaries of intellectual disability: using philosophy of science to make sense of borderline cases. Philosophical Psychology. 2021;35(1):6-21. https://doi.org/10.1080/09515089.2021.1914832

27. Grey I, Hastings R, McClean B. Staff training and challenging behaviour. Journal of Applied Research in Intellectual Disabilities. 2006;20(1):1-5. https://doi.org/10.1111/j.1468-3148.2006.00359.x

28. Guikas I, Morin D. Situation in special education: interaction between teachers and children who have intellectual disability and who display challenging behaviours. Canadian Journal of Education / Revue Canadienne De L Education. 2021;44(4):1145-1175. https://doi.org/10.53967/cje-rce.v44i4.4937

29. Hastings R. Understanding factors that influence staff responses to challenging behaviours: an exploratory interview study. Mental Handicap Research. 1995;8(4):296-320. https://doi.org/10.1111/j.1468-3148.1995.tb00163.x

30. Hastings R. Measuring staff perceptions of challenging behaviour: the challenging behaviour attributions scale (Chaba). Journal of Intellectual Disability Research. 1997;41(6):495-501. https://doi.org/10.1111/j.1365-2788.1997.tb00742.x

31. Hastings R, Brown T. Behavioural knowledge, causal beliefs and self-efficacy as predictors of special educators' emotional reactions to challenging behaviours. Journal of Intellectual Disability Research. 2002;46(2):144–150. https://doi.org/10.1046/j.1365-2788.2002.00378.x

32. Hastings R, Remington B, Hopper G. Experienced and inexperienced healthcare workers' beliefs about challenging behaviours. Journal of Intellectual Disability Research. 1995;39(6):474–483. https://doi.org/10.1111/j.1365-2788.1995.tb00567.x

33. Heller T, Arnold C. Siblings of adults with developmental disabilities: psychosocial outcomes,

relationships, and future planning. Journal of Policy and Practice in Intellectual Disabilities. 2010;7(1):16-25. https://doi.org/10.1111/j.1741-1130.2010.00243.x

34. Ho P, Downs J, Bulsara C, Patman S, Hill A. Addressing challenges in gaining informed consent for a research study investigating falls in people with intellectual disability. British Journal of Learning Disabilities. 2018;46(2):92-100. https://doi.org/10.1111/bld.12217

35. Hornby G. Inclusive special education: development of a new theory for the education of children with special educational needs and disabilities. British Journal of Special Education. 2015;42(3):234–256. https://doi.org/10.1111/1467-8578.12101

36. Huang J, Zhu T, Qu Y, Mu D. Prenatal, perinatal, and neonatal risk factors for intellectual disability: a systemic review and meta-analysis. PLOS One. 2016;11(4):e0153655. https://doi.org/10.1371/journal.pone.0153655

37. Hudson M, Browder D, Wood L. Review of experimental research on academic learning by students with moderate and severe intellectual disability in general education. Research and Practice for Persons with Severe Disabilities. 2013;38(1):17-29. https://doi.org/10.2511/027494813807046926

38. Infantri I, Lintangsari A. English teaching and mastering for learners with intellectual disabilities. Indonesian Journal of Disability Studies. 2022;9(02):283-294. https://doi.org/10.21776/ub.ijds.2022.009.02.11

39. Jacob U, Pillay J. Instructional strategies that foster reading skills of learners with intellectual disability: a scoping review. Cypriot Journal of Educational Sciences. 2022;17(7):2222-2234. https://doi.org/10.18844/cjes.v17i7.7589

40. Jacob US, Pillay J, Oladipupo OO, Eni-Olorunda T, Asiru AB. Music therapy for individuals with intellectual disability: a systematic review. International Journal of Early Childhood Special Education. 2022a;14(2):49–59. https://doi.org/10.9756/INT-JECSE/V14I2.006.

41. Jacob US, Oyefeso EO, Adejola AO, Pillay J. Social studies performance of pupils with intellectual disability: the effect of demonstration method and storytelling. Elementary Education Online. 2022b;21(1):36–47. http://www.ilkogretim-online.org/fulltext/218-1644033097.pdf

42. Jacob US, Pillay J, Ayandokun JC, Oyundoyin JO. Social skills of pupils with mild intellectual disability: do peer tutoring, storytelling and gender play a role? Universal Journal of Educational Research. 2021;9(12):1887–97. doi: 10.13189/ujer.2021.091201

43. Joyce T, Ditchfield H, Harris P. Challenging behaviour in community services. Journal of Intellectual Disability Research. 2001;45(2):130-138. https://doi.org/10.1046/j.1365-2788.2001.00331.x

44. Kodak T, Campbell V, Bergmann S, LeBlanc B, Kurtz-Nelson E, Cariveau T, *et al*. Examination of efficacious, efficient, and socially valid error-correction procedures to teach sight words and prepositions to children with autism spectrum disorder. Journal of Applied Behaviour Analysis. 2016;49(3):532-547. https://doi.org/10.1002/jaba.310

45. Kubiak J. Using 'voice' to understand what college students with intellectual disabilities say about the teaching and learning process. Journal of Research in Special Educational Needs. 2015;17(1):41-48. https://doi.org/10.1111/1471-3802.12098

46. Kubiak J, Aston D, Devitt M, Ringwood B. University students with intellectual disabilities: empowerment through voice. Education Sciences. 2021;11(10):571. https://doi.org/10.3390/educsci11100571

47. Lewis C. Child and family social workers' experiences of working with parents with intellectual disabilities. Advances in Mental Health and Intellectual Disabilities. 2015;9(6):327-337. https://doi.org/10.1108/amhid-03-2015-0013

48. Lidubwi J, Bosire J, Mutua J. Disability lens: television framing of intellectual disability and inclusive education engagement in Kenya. International Journal of Communication and Public Relations. 2023;8(3):1–12. https://doi.org/10.47604/ijcpr.1952

49. Llewellyn G, Hindmarsh G. Parents with intellectual disability in a population context. Current Developmental Disorders Reports. 2015;2(2):119–126. https://doi.org/10.1007/s40474-015-0042-x

50. Malki S, Einat T. To include or not to include—this is the question: attitudes of inclusive teachers toward the inclusion of pupils with intellectual disabilities in elementary schools. Education, Citizenship and Social Justice. 2017;13(1):65-80. https://doi.org/10.1177/1746197917705138

51. Moni KB, Jobling A. Challenging literate invisibility: Continuing literacy education for young adults and adults with Down syndrome. In: Educating learners with Down syndrome. Routledge; 2013, 221-237.

52. Morgan M, Moni K. Literacy: Meeting the challenge of limited literacy resources for adolescents and adults with intellectual disabilities. British Journal of Special Education. 2008;35(2):92-101. https://doi.org/10.1111/j.1467-8578.2008.00378.x

53. Mosito C, Warnick A, Esambe E. Enhancing reading abilities of learners with intellectual impairments through computer technology. African Journal of Disability. 2017;6. https://doi.org/10.4102/ajod.v6i0.206

54. Munir M, Setiawan W, Nugroho E, Kusnendar J, Wibawa A. The effectiveness of multimedia in education for special education (mese) to improve reading ability and memorizing for children with intellectual disability. International Journal of Emerging Technologies in Learning (IJET). 2018;13(08):254. https://doi.org/10.3991/ijet.v13i08.8291

55. Naveed S. A ranch trainee's experience working with patients with an intellectual disability: a case series. Australasian Psychiatry. 2019;27(5):522-524. https://doi.org/10.1177/1039856219839474

56. O'Connor B, Kubiak J, Espiner D, O'Brien P. Lecturer responses to the inclusion of students with intellectual disabilities auditing undergraduate classes. Journal of Policy and Practice in Intellectual Disabilities. 2012;9(4):247–256. https://doi.org/10.1111/jppi.12009

57. Ojok P, Wormnæs S. Inclusion of pupils with intellectual disabilities: primary school teachers' attitudes and willingness in a rural area in Uganda. International Journal of Inclusive Education. 2013;17(9):1003-1021.

https://doi.org/10.1080/13603116.2012.728251

58. Oliver C, McClintock K, Hall S, Smith M, Dagnan D, Stenfert-Kroese B. Assessing the severity of challenging behaviour: psychometric properties of the challenging behaviour interview. Journal of Applied Research in Intellectual Disabilities. 2003;16(1):53-61. https://doi.org/10.1046/j.1468-3148.2003.00145.x

59. Patel D, Cabral M, Ho A, Merrick J. A clinical primer on intellectual disability. Translational Paediatrics. 2020;9(S1):S23-S35. https://doi.org/10.21037/tp.2020.02.02

60. Poppes P, Putten A, Brug A, Vlaskamp C. Staff attributions of the causes of challenging behaviour in children and adults with profound intellectual and multiple disabilities. Research in Developmental Disabilities. 2016;48:95-102. https://doi.org/10.1016/j.ridd.2015.10.014

61. Rillotta F, Nettelbeck T. Effects of an awareness program on attitudes of students without an intellectual disability towards persons with an intellectual disability. Journal of Intellectual & Developmental Disability. 2007;32(1):19-27. https://doi.org/10.1080/13668250701194042

62. Ruteere R, Awori B, Kirimi F. Teachers' perception on the effectiveness of head teachers' supervisory role on teaching and learning of adaptive skills by learners with intellectual disabilities. European Journal of Special Education Research. 2021;7(3). https://doi.org/10.46827/ejse.v7i3.3905

63. Salinas Q, Tiamzon B. Beyond abilities: understanding the lived – experiences of parents of learners with intellectual disability. Cognizance Journal of Multidisciplinary Studies. 2022;2(10):14-87. https://doi.org/10.47760/cognizance.2022.v02i10.003

64. Sari H, Gökdağ H, Kizilkaya A. Evaluation of special education teachers' opinions about literacy textbooks, teaching individuals with intellectual disabilities. Journal of Modern Science. 2018;38(3):53-72. https://doi.org/10.13166/jms/95049

65. Schalock R, Luckasson R, Tassé M. An overview of intellectual disability: definition, diagnosis, classification, and systems of supports (12th ed.). American Journal on Intellectual and Developmental Disabilities. 2021;126(6):439-442. https://doi.org/10.1352/1944-7558-126.6.439

66. Schluchter T, Nagel S, Valkanover S, Eckhart M. Correlations between motor competencies, physical activity, and self-concept in children with intellectual disabilities in inclusive education. Journal of Applied Research in Intellectual Disabilities. 2023;36(5):1054-1066. https://doi.org/10.1111/jar.13115

67. Sefotho M, Ferreira R, Lushozi B. The quest for ongoing support by parents of learners with intellectual disabilities. Journal of Education. 2021;(85):1-18. https://doi.org/10.17159/2520-9868/i85a05

68. Shevlin M, Kubiak J, O'Donovan M, Devitt M, Ringwood B, Aston D, et al. Effective practices for helping students transition to work. https://doi.org/10.1093/acrefore/9780190264093.013.1234

69. Stephinah S. Parental involvement in the education of African learners with intellectual disabilities. Mediterranean Journal of Social Sciences. 2014. https://doi.org/10.5901/mjss.2014.v5n20p1629

70. Tassé M, Schalock R, Balboni G, Bersani H, Borthwick-Duffy S, Spreat S, et al. The construct of adaptive behaviours: its conceptualisation, measurement, and use in the field of intellectual disability. American Journal on Intellectual and Developmental Disabilities. 2012;117(4):291-303. https://doi.org/10.1352/1944-7558-117.4.291

71. Tierney E, Quinlan D, Hastings R. Impact of a 3-day training course on challenging behaviour on staff cognitive and emotional responses. Journal of Applied Research in Intellectual Disabilities. 2006;20(1):58-63. https://doi.org/10.1111/j.1468-3148.2006.00340.x

72. Totsika V, Toogood S, Hastings R, Lewis S. Persistence of challenging behaviours in adults with intellectual disability over a period of 11 years. Journal of Intellectual Disability Research. 2008;52(5):446-457. https://doi.org/10.1111/j.1365-2788.2008.01046.x

73. Vergunst R, McKenzie J, Hansen A. Capacity building for quality care and education for children with severe to profound intellectual disabilities in South Africa. Journal of Intellectual Disabilities. 2021;26(3):561-574. https://doi.org/10.1177/17446295211018584

74. Verma R, Kishore M. Needs of Indian parents having children with intellectual disability. International Journal of Rehabilitation Research. 2009;32(1):71-76. https://doi.org/10.1097/mrr.0b013e32830d36b6

75. Wehmeyer M, Buntinx W, Lachapelle Y, Luckasson R, Schalock R, Verdugo M, et al. The intellectual disability construct and its relation to human functioning. Intellectual and Developmental Disabilities. 2008;46(4):311–318. https://doi.org/10.1352/1934-9556(2008)46 [311: tidcai]2.0.co;2

76. Williams C, Bailey T, Hastings R. Modelling triadic relationships in families of children with intellectual disability. Journal of Applied Research in Intellectual Disabilities. 2022;35(3):843–855. https://doi.org/10.1111/jar.12988

77. Wilson C, Woolfson L, Durkin K. The impact of explicit and implicit teacher beliefs on reports of inclusive teaching practices in Scotland. International Journal of Inclusive Education. 2019;26(4):378–396. https://doi.org/10.1080/13603116.2019.1658813

78. Young L, Moni K, Jobling A, Kraayenoord C. Literacy skills of adults with intellectual disabilities in two community-based day programs. International Journal of Disability Development and Education. 2004;51(1):83-97. https://doi.org/10.1080/1034912042000182210