Universal Design for Learning as a theory of inclusive educational practice for use by educational psychologists

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Abstract

Educational psychologists seek to keep abreast of significant theoretical and practice developments within the field of Inclusive Education. This paper outlines and discusses Universal Design for Learning as a theory of inclusion highly applicable for use by educational psychologists. The Universal Design for Learning Framework is introduced by exploring the contextual history of its development and explaining the three pillars of the framework, the 'affective networks', the 'recognition networks', and the 'strategic networks'. Application of the Universal Design for Learning Framework is demonstrated with classroom based examples, drawing on existing research. A critical stance is taken towards understanding the current drawbacks to Universal Design for Leaning, and direct links to educational psychology practice are made and critically reviewed considering these.

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Introduction

Educational Psychology (EP) practice is broadly concerned with promoting inclusive education for children and young people with Special Educational Needs and Disabilities (SEND) (Kelly, Woolfson & Boyle, 2016). EPs apply psychological theory in a range of settings to enact this aim (Cline & Frederickson, 2009; Health Care and Professions Council, 2015; Kelly et al., 2016). Whilst dominant psychological paradigms, such as behaviourism, cognitivism and attachment theory, are regularly discussed in the EP practice literature, EPs also have a duty to keep abreast of innovative and diverse psychological theory and models of inclusive practice (Health Care and Professions Council, 2015). The educational psychology practice literature consists of exemplar papers which introduce and outline distinct theories of interest for EP scholarship and practice (for examples see: Davis, 2012; Gillard, Flaxman & Hooper, 2018). Accordingly, this practice paper has been written to introduce and explore Universal Design for Learning (UDL) as an inclusive educational framework based on key psychological research. The key concepts and central ideas of UDL are outlined, an explanation of how the theory can be applied to foster inclusive learning in a mainstream classroom setting is given, key critiques are made, and relevance to EP practice explored.

Universal Design for Learning as a theory of inclusive educational practice

UDL is best positioned as an educational framework for inclusive practice that draws on psychological and neuroscientific research in the learning sciences (Meyer & Rose, 2006). The intended use of the UDL framework is for the design of inclusive educational experiences, be this at a school wide or classroom level. The central theoretical idea of UDL is that educational

experiences should be made inclusive for all potential learners from the outset (Meyer & Rose, 2006). This is contrasted with the design of educational experiences for a normative majority of learners, with adaptions for those with additional needs occurring afterwards; the UDL framework refers to this learning design practice as retrofitting (Meyer, Rose & Gordon, 2014). If a strategic anticipatory learning design process is used, then UDL argues that retrofitting is not required.

This critical concept was lifted from the Universal Design movement in architecture. In 1988 Ronald Mace postulated that the design of physical environments and products should be planned to meet the needs of all users so that there should be no need for later, additional adaptions or specialized design (Ronald & Mace, 1998). A simple example of this concept is a building designed with access via steps and a retrofitted plastic ramp or chair lift later added as an adaption, rather than a building being made accessible for wheelchair users during initial design. Accordingly, UDL follows suit with the application of this idea to learning environments.

The UDL framework grew from multi-disciplinary research at Harvard university. It is built around three guiding principles that map onto three proposed psycho-neurological networks which underpin effective learning (Meyer & Rose, 2006; Meyer et al., 2014). These are:

1) Affective networks: provide multiple means of engagement
2) Recognition networks: provide multiple means of representation
3) Strategic networks: provide multiple means of action and expression

The UDL guidelines (CAST, 2020) also give further detail and guidance on how the framework can be actioned. Together they act as "a blueprint to design and delivery of instructional goals, methods, materials, and assessments that meet the needs of all learners" (Bracken & Novak, 2019, pg. 5). As such, the framework is positioned more as an umbrella of key concepts to be applied in

creative ways by the educational practitioner rather than providing a set formula or checklist. It is a set of translational, guiding principles (Meyer at al., 2014).

Affective networks: provide multiple means of engagement

The affective network is a critical component of the three guiding principles as it is concerned with how learners emotionally respond to and engage with subject material and knowledge (Hitchcock, Meyer, Rose & Jackson, 2002). Interest and emotional connection to learning material is viewed as impacting motivation, a critical factor in learning success. Closely linked is the importance of the learner developing self-regulatory skills to make self-motivated movement towards their own goals (Hitchcock et al., 2002; Hitchcock & Stahl, 2003).

The key principle related to the affective networks is that educators designing learning environments must provide multiple means of engagement (Meyer & Rose, 2006). This stems from the assumption that there is no one set way to engage all learners equally as motivations and emotional experiences differ across individuals. Thus, when planning teaching curriculum, methods, tools and input an educator should consider multiple means for each, making a range available, to engage the affective component of learning for each learner. As such, flexibility and choice are highlighted as key guiding principles (Meyer et al., 2014; CAST, 2020).

Rose and Strangman (2007) summarised neuropsychological research to conclude that cognitive processes, such as memory or attention, are not unitary functions occurring at specific sites within the brain. Instead, there are broad sets of neural networks that play a less localised role in cognition and learning. They relate the affective networks to the limbic system and its role in managing emotions and regulating hormones involved with biological drives (Rose & Strangman, 2007). As this system is important in filtering emotional information before persisting or desisting with a

course of action the affective networks and guiding principle of multiple means of engagement direct educators to consider motivation and emotional drive when designing inclusive learning environments. The affective networks and associated principle are summarised as the 'why' of learning (Meyer et al., 2014).

Recognition networks: provide multiple means of representation

Whilst engagement with learning material and tasks needs to be established it is also critical for learners to be able to comprehend and understand information. UDL describes the recognition networks as broad neurological response systems that allow learners to recognise, categorise and understand sensory stimuli, the basis for information (Rose & Strangman, 2007). The fundamental cognitive skill is pattern recognition which is argued to be present in all academic content (Rose & Strangman, 2007). As such, the recognition networks require educators to be aware that learners will have a variety of ways in which they perceive information, recognise and predict patterns, and construct knowledge to update their understanding.

Educators designing an inclusive learning environment should consider multiple means of representation, utlising many different ways of presenting and demonstrating information (Hitchcock et al., 2002; Hitchcock & Stahl, 2003). For example, they should consider both auditory, visual and physical ways of representing information, use different language and explanations, and illustrate concepts by utilising a range of media as opposed to print dominant instructional methods. In addition to meeting the learning approaches of all students, this creates a "rich cognitive learning environment" (Meyer at al., 2014, pg. 54). It also allows knowledge to be contextualised for learners from different backgrounds. The recognition networks and associated principle is summarised as the 'what' of learning.

Strategic networks: provide multiple means of action and expression

In addition to receiving information learners also need to interact with it in a meaningful way, which is the function of the strategic networks. Rose and Strangman (2007) implicate the pre-frontal cortex as important in the strategic network's role in responding to information and expressing understanding. Associated executive functioning skills of goal setting, self-monitoring, planning and organization are implicated. As with the other two networks, neuropsychological research demonstrates that how the strategic networks perform differs across individuals, and so this should be reflected in educational planning (Rose & Strangman, 2007)

The principle of providing multiple means of action and expression relates to observed variances across learners. In designing inclusive educational environments educators should plan different ways that learners can convey and communicate their understanding, knowledge and ideas (Hitchcock et al., 2002; Hitchcock, & Stahl, 2003). This in turn is viewed as supporting them to develop their strategic networks and associated executive functioning skills through trial and error of different strategies, forms of organisation, and planning (Meyer et al., 2014). Arguably, writing has historically been the dominant form of action and expression made available for learners. Meyer et al. (2014) also call on educators to consider and use visual methods, sensory approaches including movement, different ways of using speech, and videography. A variety of methods should be made available and pupils encouraged to try different ones, to self-assess which works best for them. The strategic networks and associated principle is summarised as the 'how' of learning.

INSERT FIGRUE ONE HERE

Key critiques of Universal Design for Learning

When presenting UDL as a theory of inclusion relevant to EP practice it is important to outline key critiques. This section explores potential issues for resolution, including confusion around UDL terminology, educational professionals' training and experience with applying UDL, and student responses to UDL.

Clarification and use of terminology

UDL has been considered a 'buzzword' for which there is no clear consensus on what it constitutes (McGuire, Scott & Shaw, 2006). In the same way that concepts such as 'accessibility' are contested, confusion arises due to the many variations of terms in usage (Persson Persson Åhman, Yngling & Gulliksen, 2014). These include Universal Design for Education (UDE), Universal Design for Instruction (UDI), and Universal Instruction Design (UID) (McGuire, et al., 2006; Persson et al., 2014). Arguably, appropriately delineated terminology is required for the generation of a standardised format for instruction (Persson et al., 2014). This would have the added advantage of improving understanding, usability and measurability for educational professionals, as many feel that they are not implementing UDL principles when in fact they are, due to confusion with terminology (Edyburn, 2010; King-Spears, 2020; Persson et al., 2014).

Educational professionals' training and experience of applying Universal Design for Learning

A further potential consideration is a professional's ability to effectively implement UDL. When researching teachers' ability in utilising UDL in Australian schools, Capp (2020) found that teachers' confidence levels influenced the extent to which they felt comfortable in utilizing UDL principles. In addition, they found higher levels of confidence in Primary Teachers than Secondary Teachers (Capp, 2020). A potential lack of teacher's ability and knowledge regarding UDL highlights the need for high quality training and Continued Professional Development (CPD)

(Capp, 2020; Dalton, Lyner-Cleophas, Ferguson & McKenzie, 2019; Edyburn, 2010; Griful-Freixeriet, Struyven, Verstichele & Andries, 2017; Messinger-Willman & Marino, 2010; Roa & Meo, 2016; Rose, Meyer & Hitchcock, 2005; Smith & Lowrey, 2017).

Research exploring the impact of CPD on UDL application has demonstrated that training needs to be longer than a one-day workshop to facilitate deep exploration of the UDL framework (Dalton, McKenzie & Kahonde, 2012). It is also advisable that training be extended to all school staff members to ensure systemic implementation (Dalton et al., 2012). However, some educational institutions do not have the time or capacity to embark on additional training, particularly if this training endeavours to explore Assistive Technology use alongside UDL instruction (King-Spears, 2009; Meyer and Rose, 2006; Messinger-Willman & Marion, 2010; Ralabate et al., 2012; Sopko, 2008; Vitelli, 2015).

Another related consideration is that UDL is not currently taught regularly or consistently as part of initial teacher training programmes in either the UK or the USA. A potential solution for this would be to encourage teacher educational programs to facilitate the teaching of UDL principles to trainee teachers, a process that is improving but is yet to reach a significant level of progression (Vitelli, 2015). Vitelli (2015) conducted research across 22 states in the USA and found that the current level of induction of UDL to trainee teachers meant that although 60% of trainee teachers recognise UDL concepts, only 24.1% of this 60% were able to implement the pedagogical practices. As such, inclusion of comprehensive instruction on UDL in teacher training courses is one avenue for consideration for improving teachers' experiences of implementing the complexities of the framework.

Student learning responses to Universal Design for Learning

A key claim of UDL is that its application successfully supports all students to engage with learning and make meaningful progress (Rose & Meyer, 2002; CAST, 2020). It "focuses on a holistic approach to curriculum development…that reduce barriers at the outset of the learning process" (Messinger-Willman & Marino, 2010, p. 8-9). Despite this worthy aim, UDL guidelines are critiqued for being too specific and geared towards supporting a particular disability, or condition, despite learning needs varying even for those with a particular disability / condition (Griful-Freixeriet et al., 2017). This has the potential to be exclusionary to students with learning needs that fall outside of these specific guidelines (Smith & Lowrey, 2017). A complementary school of thought suggests that UDL should be the "backbone" for other methods (Smith & Lowrey, 2017). By utilising UDL first, and then incorporating other instructional techniques, independence can be supported for students who face individual barriers to learning whilst also aiming to create an environment enriching for all (Dalton et al., 2019; Hitchcock & Stahl, 2003; Rose et al., 2005).

A further critique of UDL is the argument that it needs to become more flexible and to consider the relative merits of differentiated instruction (Griful-Freixeriet et al., 2017) as providing resources and accommodations to all students in a group, regardless of need, can create passive pupils (Griful-Freixeriet et al., 2017). However, research conducted by Katz (2013) showed that pupils taught using UDL instruction were engaged for 44 out of a possible 60 minutes, compared to a control group receiving regular instruction, who were only engaged for 19 minutes. This research weakens the critique regarding passive learners (Griful-Freixeriet et al., 2017) and suggest that there is potential that students utilising UDL instruction do become more engaged. However, this study did not employ measures that explore subsequent impact on academic success and thus this is an area for further study.

Application of Universal Design for Learning in educational settings to promote inclusive practice

The quest for inclusive classroom practice is one which is continually sought by educational professionals. Hitchcock et al. (2002) argue that most educational settings develop a curriculum suited to a core or 'norm' group of learners, which does not take into consideration the needs of those students with disabilities or additional and diverse needs. However, as previously discussed, UDL seeks to change this with the removal of barriers to learning through a framework which focuses on a consideration of three key areas: affective networks, recognition networks and strategic networks. The following section shall look at each of these networks in detail and explore the ways in which an understanding of them could contribute to inclusive classroom practice.

Application of the affective networks within classroom practice

Engagement and motivation to learn is a key factor in the role of the affective network. Rose and Strangman (2007, p383) state that "each individual continually evaluates and prioritizes patterns in terms of their appeal and significance." It is this appeal to learn and creating of significance combined with the importance of the 'why' in teaching and learning which UDL promotes through the use of engagement strategies such as choice and autonomy, clear goals and mastery orientated feedback. Mastropieri, Scruggs, and Graetz (2005) agree with this by suggesting that using activities when teaching science which are hands on, practical in nature and combine group interaction with problem solving tasks can foster high levels on engagement with pupils and increased positive learning outcomes. Furthermore, the learning environment must be nurturing, safe, supportive, and culturally responsive (Price & Steed, 2016).

Although a variety of motivational constructs exist these can arguably be refined to two key questions which pupils face. (1) Can I do this learning task? and (2) Do I want to do this learning task and why? (Eccles, Wigfield & Schiefele, 1998). Therefore, embracing the 'why' of learning could be considered a key element in planning for inclusion throughout educational settings. Reeve and Jang (2006) highlight some of the ways in which teachers can support autonomy by suggesting they allow students choices around what and how they want to learn and providing constructive feedback which supports this. However, with already heavily burdened curriculums and national standards to meet, is this level of autonomy realistic within an educational setting? The UDL framework suggests that autonomy can be visible in the form of a pupil's perceived level of challenge, possible rewards available or the media or formats used for information gathering or design. Empowering pupils to choose particular topics of study they may be passionate about or allowing them to use a favoured method of communicating their learning, e.g. pictures, videos, comic strips can be powerful motivators. Indeed, studies by Parker and Ivy (2014) and Rowland (2009) found that children with visual impairments or deaf - blindness were increasingly motivated to interact and communicate when presented with activities linked to their interests. Grouping within the classroom has also been shown to influence pupil engagement, with small group and partner work leading to higher levels of active engagement when compared to whole class or lone working situations (Baker, Clark, Maier & Viger, 2008).

The setting of clear goals is another key concept within the UDL framework and the idea of 'unwrapping' the standards is one which will be familiar with educators globally. Advice within the UDL framework supports the need to represent the goal in a number of ways moving away from the view of goals merely as a measure of performance based upon ability to one which promotes learning goals to develop skills and knowledge (Meyer et al., 2014).

In the UDL cycle of instructional planning below, the reflective nature of the framework is evident. Going beyond the graduated approach of Assess, Plan, Do, Review (APDR) promoted in the SEND Code of Practice: 0-25 Years (Department for Education and Department of Health, 2015) the instructional planning cycle supports the 'unwrapping' of standards in order to provide clear goals based upon the skills and concepts that pupils will master. Starting from a point of what do we want pupils to know rather than what can they learn eliminates the possible preconceptions of ability and ensures high expectations for all learners regardless of disability or additional needs.

Application of the recognition networks within classroom practice

Entrenched in the "what" of learning, the recognition framework promotes the use of multiple modes for the presentation of information and learning. Courey, Tappe, Siker and LePage (2013) define representation as the design and formation of instructional materials that meet the needs of the greatest number of learners. Hitchcock et al. (2016) further elaborates on this definition by reinforcing the notion that using multiple examples enable classroom teachers to highlight the key features of a concept, and explore the similarities and differences against other concepts. This facilitates deeper engagement, interaction and understanding of the concept. Utilising variety in the representation of the information allows greater scope for all pupils to access information and empower them to feel independent within their learning.

The use of authentic situations or "real life" interactions using real objects and resources can provide high quality learning experiences (Che, & Dote-Kwan, 2020; Chen & Downing, 2006). For example, consider an early years teacher teaching the consonant diagraph "ch". She uses pictures of the words which begin with "ch", printed words to match the pictures, as well as real life examples. She also shows a video clip of the sound "ch" being spoken so that pupils can see

what shape the mouth forms when making the sound, hearing the pure sound. This multiple means of representation enables all pupils to engage with the lesson content.

The wider the different forms of representation used, the better. This is especially true for the use of technology. Research by Strangman Hall and Meyer (2003) shows that using digital media, such as computer simulations and graphic organizers, can be highly effective for all learning helping them to create connections across knowledge and concepts.

Further support to develop meta cognitive strategies include the use of "chunking' which is defined by Thalmann, Souza and Oberauer (2019, p37) as "Chunking is the recoding of smaller units of information into larger, familiar units. Chunking is often assumed to help bypassing the limited capacity of working memory (WM)". Developing a curriculum which supports the use of chunking in order to develop working memory can be effective for all pupils as they are able to link smaller pieces of information together into larger concepts and have a deeper understanding of the connections between information.

Application of the strategic networks within classroom practice

The strategic network draws on the "how" of learning and promotes the need to provide multiple means of action and expression for learners. This can include varying the ways in which learners can respond to their learning, the options for use of multimedia and digital resources to convey knowledge and progress monitoring. Singular use of written responses to learning dismisses the challenges which many pupils face when trying to communicate what they have learnt and require all pupils to respond to learning in the same way. Given that learners are diverse and varied with regards to their needs it would seem reasonable that the way in which they express and communicate their ideas be as diverse and varied.

In order for pupils to progress in their learning, effective feedback must be available. The UDL framework guidance promotes the use of mastery – orientated feedback, that is feedback "that guides learners toward mastery rather than a fixed notion of performance or compliance... and emphasizes the role of effort and practice rather than “intelligence” or inherent “ability” as an important factor in guiding learners toward successful long-term habits and learning practices." Wells (1999, p200) explains that teacher verbal feedback can be more than a quick recognition of knowledge or a right or wrong answer. It can also be “an opportunity to extend the student’s answer, to draw out its significance, or to make connections with other parts of the students total experience”. Using feedback strategies such as peer feedback can also be a powerful tool for inclusion within the classroom. However, Sluijsmans (2002) emphasizes the importance of training and practice for pupils in order to assess and deliver quality peer feedback, this is something which educators must factor into their teaching if they are to utilise peer feedback effectively.

Other forms of feedback can contribute to an inclusive classroom. The use of checklists, example or models of work as well as prompts can all promote effective self- assessment for pupils. When exploring self -assessment as a tool for inclusion Bourke and Mentis (2013 p854) state that “self-assessment, particularly, makes their sense of identity and belonging visible.” Therefore, the process of self- assessment addresses the ‘self’ in the inclusive environment as well as empowering the pupil to recognise their own strengths and goals for learning, highlighting clear links between the need for social inclusion as well as academic, a focus of the affective network of UDL provision.

Summary

Overall, the UDL framework gives educators the opportunity to focus on inclusion within the classroom as a priority through use of the planning cycle, consideration of representation, assessment, and digital resources. Some might argue that it is merely a parallel framework to that of 'Quality First Teaching' (QTF), (Department for Education and Department of Health 2015, p99). However, the focus on high expectations for all and development of lesson plans from target objectives and skills would indicate that it goes beyond QTF and becomes a philosophy of inclusion which can be adopted by a school as a whole; It focuses on the learner, structured support, autonomy and celebration of diversity.

The potential for application of Universal Design for Learning by educational psychologists

UDL offers a comprehensive, psychological research and theory driven, theoretical framework for EPs to utilize when working with school professionals to support inclusive educational practice. EPs are able to draw on UDL across a range of elements in their practice, including consultation, training and research.

The potential of Universal Design for Learning for consultation

EPs have sought to move away from individual casework towards systemic and consultation based practice (Nolan & Moreland, 2014). The increasingly outdated practice of *direct* case work involves working exclusively with a child to assess their learning strengths and weaknesses, and thus has been critiqued for promoting 'within child' thinking (Gillham, 1978; Sewell, 2016). This predominantly leads to classroom based (and sometimes home based) psychological interventions that focus on instructional and resource adaptions particular to one child, whilst teaching as usual occurs for the majority of pupils (Sewell & Smith, 2020). As such, this form of traditional, *direct* casework can be aligned with UDL's critique of the practice of retrofitting; teachers design their

lessons based on the learning requirements of a perceived majority and work with an EP to make secondary adaptions for a particular child, based on the EPs assessment of individual needs and recommendations.

The UDL framework thus offers a suitable theory for EPs to apply when seeking to move away from individualsed assessment and specific adaption recommendations for one child (a traditional conceptualisation of 'casework' involving direct work), towards systemic change and adoption of a consultation model of practice. For example, a modernisation of case work has been suggested whereby systemic change can be enacted by EPs through individual assessment and intervention work initially occurring at the level of the child (Fox, 2009; MacKay & Lindsay, 2015; Pellegrini, 2009). EP recommendations are not made specifically for retrofitted adaptations singularly for the child, but instead focus on systemic pedagogic changes that can occur at the whole class or even whole school level (Fox, 2009; MacKay & Lindsay, 2015; Pellegrini, 2009). This development of how EPs enact casework clearly aligns with UDL's core principle of pedagogic design that encompasses diversity in learning needs from the outset, as a philosophy of inclusion practice.

The UDL guidelines encompassing the 'why', 'what', and 'how' of learning can be shared with teachers during a consultation as a framework from which to generate instructional and resource changes that, whilst accommodating for the needs of a particular child, or group of children, have the wider aim of developing teaching practice for all pupils in the classroom, or even school. Further still, the main concepts and guidelines of UDL are amenable to application with other psychological theory when used with existing frameworks for practice.

For example, UDL could readily support use of the Interactive Factors Framework (IFF) by an EP seeking to create a psychological formulation that will generate wider change in a teacher's classroom practice, instead of retrofitted adaptions for a specific child (Frederickson & Cline,

2002). Exploration of how general teaching practice should consider the 'affective networks' would augment needs arising from the 'behavioural' dimension of the IFF. Exploration of how teaching practice should consider the 'recognition networks' would facilitate support for learning needs arising from the 'cognitive' and 'biological / neurological' dimensions. Lastly, exploration of the 'strategic networks' would map onto 'environment' and 'support' considerations in the IFF. Further still, each aspect of the UDL framework already draws on existing psychological research rendering it readily usable alongside compatible psychological theory.

Another example of a psychological model often adopted by EPs during consultation is the bioecological model (Cline & Frederickson, 2009). This involves the application of the Process-Person-Context-Time (PPCT) model (Cassells & Evans, 2020; Trudge, Mokrova, Hatfield & Karnik, 2009). Application of the model has been critiqued for lack of clarity over what constitutes proximal and distal processes in learning and child development (Cassells & Evans, 2020; Trudge et al., 2009). Aligning UDL with the PPCT model during an EP consultation would meet this challenge. The 'affective', 'recognition', and 'strategic' networks could be positioned as proximal processes to help elucidate *what* pedagogical changes educators can make from an ecological, systemic perspective. For example, a proximal process of concern is the *how* of learning, how a child with SEND comes to learn and evolve developmentally. The 'strategic networks' offers a concept for understanding and enacting this, as demonstrated in the previous section '***Application of the strategic networks within classroom practice'.***

The potential of Universal Design for Learning for training

EPs are well placed to respond to the critique that comprehensive training is required for teachers to be able to effectively implement UDL (Rose et al., 2005; Edyburn, 2010; Messinger-Willman

& Marino, 2010; Roa & Meo, 2016; Griful-Freixeriet et al., 2017; Smith, & Lowrey, 2017; Dalton et al., 2019; Capp, 2020). Delivery of CPD training is a critical part of the EP role and is often tailored to the needs of the school that the EP is working with. This places them in an unique position for negotiating the depth and time required for training to be effective, often engaging in follow up consultation to support systemic implementation. As such, EPs are able to respond to current critiques that UDL teacher training needs to be longer that one day to facilitate deep understanding of the framework (Dalton et al., 2012). Similarly, EPs are able to provide ongoing clarification and support for teachers seeking to use UDL as the bedrock of their practice, but also wishing to incorporate other instructional techniques (Hitchcock and Stahl, 2003; Rose et al., 2005; Dalton et al., 2019).

The potential of Universal Design for Learning for research

As is clear from the previous section exploring critiques of UDL, further research is warranted. This is especially so regarding empirical evaluation of the real world application of UDL theory. Again, applied research is a cornerstone of EP practice with EPs possessing the relevant skills to engage in this area. One key potential avenue for EP research into UDL is exploring its impact on student learning. For example, Katz (2013) study exploring UDL's impact on on-task learning behaviour could be replicated and extended to consider other measures such as pupil satisfaction, attainment, and wellbeing. Another interesting potential research area is whether adoption of UDL by teachers as a basis for inclusive practice facilitates attitudinal change. There is emerging scholarship suggesting that teacher's trained to view children with SEND as requiring planning and inclusion from the outset, rather than requiring something 'additional to' and 'specialist' (e.g., retrofitting), leads them to develop inclusive values and more a proactive approach towards

equality and diversity (Sewell & Smith, 2020, pg. 53). It would be important to see if training teachers in UDL leads to wider attitudinal change and associated reviews of inclusive practice.

Summary

This practice paper has presented UDL as a theory of inclusion for use by educational psychologists. UDL offers a perspective that encourages consideration of how to make an educational environment and its learning opportunities inclusive for all from the start, instead of planning for a perceived norm and then retrofitting additional support. It is this central concept that can be harnessed by EPs to facilitate inclusive practice on a systemic level, enacted through consultation. UDL has developed a comprehensive framework consisting of three key networks to actualize this goal, each of which have been outlined with examples of how classroom practice. As with all theories, UDL has received valid critiques for which this paper has positioned EPs as well placed to conducted applied research to explore further.

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