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From dynamic assessment of cognitive abilities to educational interventions: Trends in cognitive education

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Being a pedagogue with over twenty years' experience in training teachers, I have lately been attracted by ideas bridging the growing gap between neurological and psychological research findings and their practical application in schools. For instance, Tokuhama-Espinosa (2010) points out that current findings in brain research have limited connection with actual educational practice. The outcomes of research on learning processes are insufficiently projected in teacher training programmes. Curriculum documents and teaching materials copy the discourse specific to educational policy in the country of origin and development. The consequence of the insufficient links between basic and applied research in the field is a growing gap between those who generate research outcomes and those who are supposed to integrate the outcomes in applied education and subsequently bring them to life in educational practice. The reason for this gap is straightforward: it is immensely important, though extremely demanding, to "translate" the outcomes of complex neurological and psychological research so that they are applicable in real classroom settings. Researchers' attitudes are frequently that their work ends once the research findings have been presented. Here, the question arises as to who should rise to the challenge of becoming the mediator or transmitter in the process of incorporating research findings in pedagogical practice. At present, the response to this situation is manifested in the pursuit of interdisciplinary links between psychological and pedagogical (in fact, psychodidactic) discourse. For instance, a group of experts in the

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International Association of Cognitive Education and Psychology1 (IACEP) take on new members from the field of education sciences. Sternberg (2013) serves as another example. In a special issue of the *Journal of Cognitive Education and Psychology*, he suggested that the academic community will have to address the following questions in the near future:

1. What is cognitive education?
2. *How should it be done? How should it not be done?*
3. *How should the effects of cognitive education be measured?*
4. *What, if any, examples exist of successful programs?*
5. *What recommendations do you have for cognitive education?"* (Sternberg, 2013, p. 4).

We would like to point out that the questions were formulated broadly for an audience of psychologists and researchers. Sternberg calls for interdisciplinarity and urges experts to define the processes and interventions associated with cognitive education. Notwithstanding the fact that Sternberg only formulated the questions two years ago, cognitive education is in fact a fairly well-known term in pedagogical discourse. It features in studies dating back to the 1970s (Arbitman-Smith & Haywood, 1980; Haywood, 1977). The dynamism of the cognitive education paradigm was encouraged by numerous psychology studies. These studies documented the fact that intervention or the stimulation of cognitive functions led to greater effectivity in a child's functioning (for instance, see Binet & Simon, 1916; Feuerstein, 1970; Feuerstein et al., 1980; Kozulin, 1999; Paour & Soavi, 1992; Tzuriel, 2001; Vygotsky, 1978). Likewise, the idea that there might be a need for cognitive education was prompted by neuropsychological evidence demonstrating the plasticity of the neural structures mediating cognitive processes (see more in Doidge, 2007; Drubach, 2000; Howard-Jones, 2010; Kolb, Boyatzis, & Meinemelis, 2000; Kulistak, 2003; Sousa, 2001). Cognitive education is an educational paradigm whose knowledge base is founded in cognitive science research (psychology, neuroscience, linguistics, philosophy of the mind, and information science). The primary goal of cognitive education

[1] The International Association for Cognitive Education and Psychology is a society of professionals from all over the world who are interested in advancing the cognitive education of children, young people, and adults. IACEP strives to be an organization that brings together people with diverse applied and theoretical interests. The Associations welcomes the participation of teachers, therapists, assessment specialists, administrators and research professionals, recognizing the importance of collaborative inquiry that involves researchers and practitioners, working together or separately, in advancing the goals of cognitive theory, education, assessment, and therapies. For more information see http://www.ia-cep.org/

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is to develop the cognitive functions associated with the ability to perceive, elaborate and apply information in order to make the learning process more effective (Glaser, 1988; Sawyer, 2006). Cognitive functions are also required for mental functioning outside the school, since they govern the ability to think, plan, monitor complex mental activities, regulate emotions, creativity, and gauge the importance of social interaction (Ashman & Conway, 1997). For that reason, within the paradigm fundamental educational outcomes are not achieved through the acquisition of curricular content, but through internalizing higher order thinking skills and meta-cognitive strategies, and improving the elementary cognitive functions involved in more complex cognitive processes (Filickova, Kovalcikova, & Ropovik, 2015; Haywood, 2004). Theories of cognitive education are based on a broad spectrum of cognitive science research into aspects of learning potential, attention, perception, memory, thinking, languages and planning, as well as aspects of the affective and cultural domains. Currently various cognitive education programmes are being implemented at institutional and national levels (Lebeer, Candeias, & Gracio, 2011; OECD, 2007).

Within this context, it should be noted that we differentiate between Cognitive Education and Cognitive Pedagogy. We conceive of Cognitive Education as a specific educational activity in defined educational contexts. We believe that for the purposes of implementing Cognitive Education methods, it is vital to define the area of educational sciences that would systematically engage in the theoretical and applied dimensions of Cognitive Education. In our opinion reflecting on and putting into practice neurological and psychological research outcomes should become the core and highest priority of Cognitive Pedagogy. We thus see Cognitive Pedagogy as a part of the educational sciences that cover the target, content, process, and effect aspects of Cognitive Education at the theoretical, research and applied level. There are at least two baselines at present determining the research focus in applied cognitive psychology: a diagnostic and an intervention line. Both lines have a significant influence on Cognitive Education.

Diagnostic Line

Within the diagnostic line, there is an debate going on in cognitive psychology, and consequently also in cognitive education, on dynamics in assessing the individual's cognitive abilities. For instance, experts belonging to the above mentioned International Association for Cognitive Education and Psychology have been developing a discourse related to the dynamic testing paradigm for several decades. This paradigm is understood as a complemen-

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tary procedure for assessing latent cognitive and thereby learning abilities. It is considered to be important in the context of low performing children. Dynamic assessment tests the individual's ability to acquire thinking tools. It is an analysis (quantitative or qualitative) of a child's learning potential. Dynamic assessment divides the learning process into elementary aspects - cognitive processes that constitute the learning process and might be the reason for a decrease in academic performance. The processes of attention, perception, memory, higher order thinking, meta-cognition, problem solving and language are believed to contribute to learning potential (Haywood & Lidz, 2007; Haywood & Tzuriel, 2002). A deficit in any of these domains may significantly influence the ability to abstract from experience, ergo the ability to learn. The primary goal of dynamic assessment is to ensure a change in the functional level of these processes so that the assessment is enriched by a learning phase, that is, an intervention phase. Put simply, firstly we test how a child does when solving problems independently, subsequently the strategies (attention processes and the like) are mediated to the child, and finally the success of the mediation is assessed, that is, we assess the extent to which the child is able to profit from the intervention and thus learn. Regardless of the model, dynamic assessment has the following three features:

1. Didactic relationship between the examiner and the examinee

Static assessment of cognitive skills involves a neutral, asymmetric relationship between the administrator and the examinee (Dzuka & Kovalcikova, 2008a; 2008b; Greenfield, 1997). This type of relationship guarantees the objectivity of the assessment (Lidz, 1992). By contrast, in dynamic assessment the examiner brings about active interaction in order to induce changes in the child's actual level of problem solving capacity. The involvement of the examiner is thus seen as pre-requisite to assessment rather than an interfering variable.

2. Focus on learning processes

Dynamic assessment (the clinical approach in particular) is not primarily focused on learning outcomes; it concentrates on learning process diagnostics (Tzuriel & Klein, 1987). While static assessment does not analyse the nature and possible cause of errors in problem solving, the dynamic paradigm considers exploration of the error source to be a fundamental principle in child diagnostics.

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3. Conceptualizing change

Direct intervention and observation is the only way to understand the developmental process (Paour & Soavi, 1992). The aim of dynamic assessment is not to assess the actual level of cognitive functioning, but to conceptualize the change that occurs after the child has been helped. Retest measures and a structured series of prompts are used in this conceptualization. The prompts are integral to solving each test item and reflect the amount of help necessary to achieve the maximum level of performance (Sternberg & Grigorenko, 2002).

Models of Dynamic Assessment

There are several approaches and models of dynamic assessment available at present and these differ in a number of aspects. Despite the attempts of several authors (particularly of meta-analytical studies) to classify these models (for instance Jitendra & Kameenui, 1994; Sternberg & Grigorenko, 2002; Swanson & Lussier, 2001), there is no unanimously accepted classification. There are several reasons for this; the main one being that the term "dynamic assessment" refers to techniques often varying in aims, procedures and also conceptual questions (Murphy, 2007). It is most likely that different methods of dynamic assessment measure different learning potentials (Karpov, 2008; Tzuriel, 2002); that is why it is difficult to conceptualize the outcomes of measurement, obtained via various methods, as a homogenous construct. [2]

Basically, dynamic assessment procedures differ as follows. In relation to the nature of the task we distinguish the following procedures: (1) curriculum-based or (2) domain-general procedures focusing on the acquisition of generally applicable forms of thinking (for instance, inductive reasoning). Curriculum-based dynamic assessment comprises tasks mainly based on language and the maths school curriculum. The level of the child's efficiency in curriculum acquisition is inferred from an examination of the input and output level of competencies in some aspects of the subject and from attentive inspection of the nature of the intervention. So called domain-general dynamic assessment uses specific content for evaluation. The content is very often similar to that of intelligence tests and is not bound to the school curriculum.

[2] In accord with this, Guthke argues that there is no homogenous zone of proximal development; rather, there are several domain-specific zones of proximal development (Guthke, 1993).

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In terms of dynamic assessment goals, some approaches focus on the operationalization of assessment output in the form of a final score. These approaches reflect the pupil's ability to profit from the instruction, that is, to learn. However, other approaches involve recommending which instructions should follow as an output. By doing so, they sacrifice the possibility of precisely quantifying the output. While the quantifying approach is closer to the psychometric tradition, the nature of non-standardized intervention is fairly clinical.

The most significant conceptual differences, though, can be found in the content and form of intervention. The intervention content of individual dynamic approaches may vary in the level of standardization. Approaches not aiming to quantify learning potential are usually non-standardized or semi-standardized. On the other hand, if the aim of the assessment is to establish the child's zone of proximal development or learning potential, the administrator would have difficulties determining the child's sensitivity to the intervention without operationalizing the intervention. The form of intervention is the second conceptual difference in dynamic assessment techniques. In dynamic assessment, intervention is always an integral part of the assessment.

Of all the dynamic assessment approaches, the following three have had the largest formative influence on this freshly emerging paradigm (Sternberg & Grigorenko, 2002):

1. Feuerstein's mediated learning approach and its applied system known as LPAD (Learning Propensity Assessment Device) (Feuerstein et al., 2002);
2. the graduated prompt approach developed by Campione and Brown (1987) in the form of Testing via Learning and Transfer;
3. the psychometric oriented approach by Budoff (1987a; 1987b).

It is vital to mention that despite the considerable criticism of static assessment, dynamic assessment is still perceived as a complementary method which does not aim to replace traditional psychometric assessment (Buchel & Scharnhorst, 1993; Minnaert, 2002; Resing, Roth, & Van der Werf, 2002). These two assessment types in fact assess different aspects of the child's cognitive functioning. Generally, in order to correctly assess the degree of future development it is necessary to monitor the present situation well. Thus, static assessment is no less importance.

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Intervention Line

Another discourse that could be considered influential in overcoming the gap between brain research and actual educational practice is that related to the development of cognitive functioning programmes. These programmes take the form of (1) transversal approaches (extracurriculum approaches not related to the content of specific school subjects) aimed at the acquisition of generally applicable forms of thinking, or (2) context oriented approaches that develop specific cognitive aspects within curriculum domains (maths, language, science, and so forth).

The aim of the transversal, generally oriented approaches is to develop cognitive functions using extracurriculum content. Programmes such as Instrumental Enrichment (Feuerstein et al., 1980), Bright Start (Haywood, Brooks, & Burns, 1992), COGNET (Greenberg, 2000), and Peer Mediation with Young Children Programme (Tzuriel & Shamir, 2007) are the most frequently applied approaches within this group. These programmes are based on the principle of what is known as mediated learning (see Feuerstein et al., 2002; Tzuriel, 2001) and focus on the comprehensive development of cognitive functions crucial to learning. The other most frequently used approaches within the extracurriculum group are the Concept Teaching Model programme (Hansen, 2009; Nyborg, 1993), which develops conceptual and analytical thinking; PREP (Das, 1999), which concentrates on developing attention, the ability to plan, and information processing; Process-based Instruction (Ashman & Conway, 1989) aimed at interiorising meta-cognitive strategies for effective curriculum content acquisition; Structure of Intellect (Meeker, 1965), which is at present based on developing twenty-six specific intellectual abilities that are conceptualized as part of Guilford's Model of Intelligence (Guilford, 1977); CoRT Thinking Programme (De Bono, 1991) to develop lateral (creative) thinking; or Tactics for Thinking (Marzano, 1998) that mediates specific learning strategies to children. Overall there are more than one hundred of these domain-general programmes (Lebeer et al., 2011) whose shared aim is to develop the cognitive pre-requisites of effective curriculum mastery. Despite the number of programmes developed, many of them remain at the design or verification stage, but some have led to systematic change in mainstream schooling.

The second group of cognition development programmes consists of curriculum-framed approaches, that is, within specific subjects. Examples of these approaches are: CASE (Adey, 2003; Adey, Shyer, & Yates, 1992) which aims to develop cognition via natural science; Cognitive Assault Strategy (Miles & Forcht, 1995) and the Connecting Mathematics Concepts pro-

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gramme (Engelmann & Carnine, 1991) which both develop meta-cognitive verbal strategies in maths learning and in perceiving mathematical concepts; Read Naturally (Ihnot, Kilkelly, & Nochols, 2000) and RAVE-O (Wolf et al., 2002) develop verbal fluency; the PHAST Track Reading Program (Lovett, Lacerenza, & Borden, 2000) deals with analytical strategies for reading words, and there are many other programmes to develop the cognitive functions crucial to reading comprehension (for an overview see Dehn, 2008). Overall there are more than two hundred such cognition development programmes (Haywood, 2004; Lebeer et al., 2011) available today. We assume though that in relation to the curriculum-oriented cognitive education programmes mentioned above, there are a few sources that could document their systematic and comprehensive application into standard educational practice.

In June 2014, the International Association of Cognitive Education and Psychology organized a regional conference in Budapest. As mentioned above, the name of the association alone indicates the link between basic and applied research in cognitive psychology. This association is therefore particularly welcoming of developments in cognitive pedagogy and cognitive education. The experts in the IACEP are interested in aspects of dynamic diagnostics with regards to a child's cognitive abilities. Mediation, clinical intervention, special pedagogical procedures via programmes designed for special population groups are all part of the scientific efforts of experts in the IACEP.

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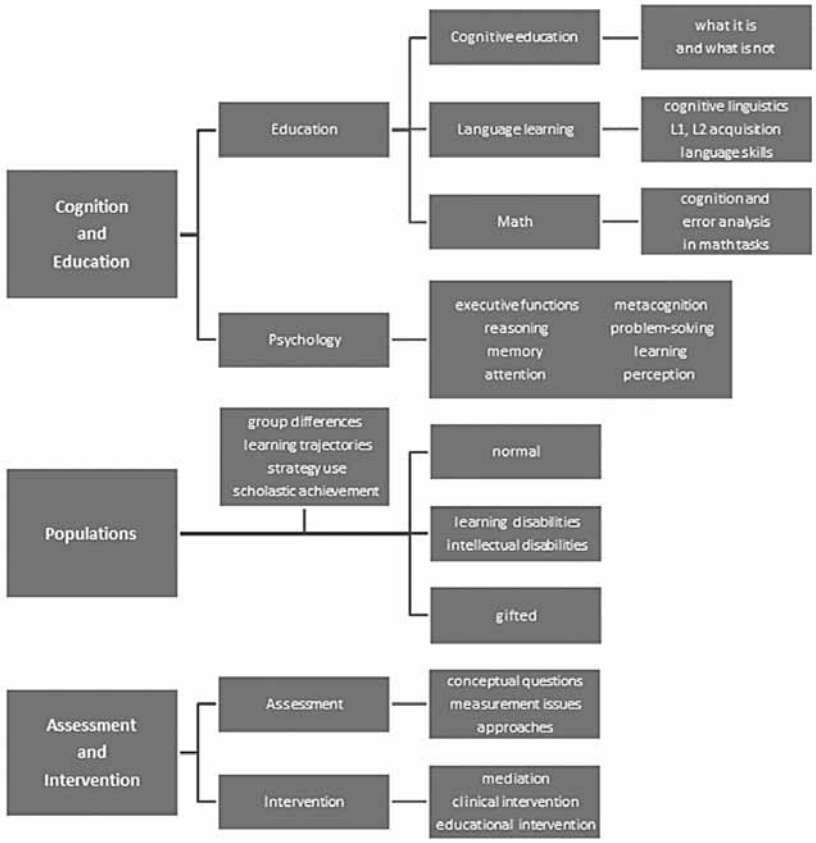
The 2014 European regional IACEP conference was on Cognitive and executive functioning: concepts, measurement and educational implications. The area of debate is illustrated in the following diagram:



Four of the papers presented at the European regional IACEP conference in Budapest, June 2014, are included in this special issue of the *Journal of Pedagogy*. The papers reflect four different viewpoints on research relating to the individual's cognitive and executive functioning. The articles bear similarity in that they all closely follow the provided research focus on aspects of the individual's cognitive performance, highlighting possible applications for individual performance assessment results in educational and clinical contexts. The articles differ in the following ways:

- in relation to research stage (pilot study, more extensive research),
- in relation to the specialist area of the presenter (psychology, pedagogy, psycholinguistics),
- in relation to the focus:
  - different cognitive performance assessment types and approaches

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– varied dynamic testing conceptions of the individual's abilities (specifically, idiographic measurement for dynamic assessment intervention and computerized dynamic test of analogical thinking).

Two articles focus on the concept of dynamic assessment of the individual's cognitive abilities: (1.) Filickova, Ropovik, Bobakova, and Kovalcikova, The relationship between fluid intelligence and learning potential: Is there an interaction with attentional control?, and (2.) Murphy & Hurley, The development of a new method of idiographic measurement for dynamic assessment intervention. In the first article, learning potential is operationally defined using Animalogica scores, a dynamic test of analogical reasoning in children (see Resing, 2013; Stevenson, 2012). Learning potential is the variable examined in relation to fluid intelligence (gf) and attentional control (AC). The study investigates the hypothesized interaction effect between gf and AC on learning potential. The authors also stress the educational implications of their research. All three concepts examined in the study are considered crucial for academic achievement. Much of learning in school is regarded as a form of analogical reasoning, which is often assessed using classical analogy problems (e.g. matrices). The ability to solve such analogy problems, a measure of fluid reasoning, has been shown to be a good predictor of academic achievement in both reading (Ferrer et al., 2007; Stanovich, Cunningham, & Feeman, 1984) and maths (Primi, Ferrão, & Almeida, 2010; Taub, Floyd, Keith, & McGrew, 2008).

The paper by Hurley and Murphy proposes a new method of idiographic measurement for dynamic assessment intervention. Two main methods of dynamic assessment intervention measurement are analysed: (1) split–half tests and (2) integrated scoring systems. As the authors emphasize, integrated scoring systems coupled with case studies are useful from a practitioner perspective. The purpose of this research is to bridge the gap between research and practice by developing a methodology that is compatible with both. The paper proposes a measureable idiographic method of measurement, which utilises multi-dimensional scaling (MDS) and general procrustean analysis (GPA) to analyse the results of card-sort data gathered from a learner throughout the entire intervention. This approach provides a method of assessment which is both compatible with individual intervention and suited to building a body of evidence-based research for dynamic assessment. An example of the method in practice is given for illustrative purposes. According to the authors, the initial results suggest that this approach provides a methodology that satisfies the requirements of practitioners when formulating targeted intervention and researchers who require methods for measuring change in an individual's ability over time.

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The paper by Kucera and Havigerova deals with the issue of computational psycholinguistic analysis (CPA) and its experimental application in basic psychological and pedagogical assessment. CPA is presented as a new method which may potentially provide interesting, psychologically relevant, information about the author of a particular text. As part of their research the authors studied the link between the linguistic form of a text by Czech college students and their personality characteristics obtained from a psychodiagnostic test battery. The article also discusses the basis of the method, opportunities for practical application and potential use within psychological and pedagogical disciplines.

The fourth article dealing with cognitive education and psychology (by Ferjencik, Kresila, & Slavkovska,) introduces the concept of executive functioning into the discourse. As a construct, executive functions (EF) originated in the field of neuropsychology and they were identified during investigation of neurological disorders and their behavioural manifestations. The authors define executive functions as a system of operating processes that prioritises certain processes, while at the same time inhibiting the activity of others. Executive functions are thus mental functions that control cognitive functions3, conditioning their participation in the stimulus processing and distributing mental resources for processing and utilization. These functions are manifested mainly in the processes of inhibition, attentional control, working memory, self-regulation, and planning (see Ropovik, 2014). Executive functions are the highest, central level of mental functioning that guarantees the coordination and organization of cognitive functions. They activate and regulate other mental abilities such as thinking, language, or the creation of visuo-spatial representations. The concept of executive functions has great impact on the field of education and diagnostics, since the majority of research linking the construct of executive functions with academic achievement asserts that levels of executive functioning are a better predictor than IQ test scores, mathematical aptitude, or literacy levels (for instance Blair & Razza, 2007; Duckworth & Seligman, 2005). The authors of the article focus on aspects of the executive functioning level measurement for children. Executive performance is measured using D-KEFS Test Battery (Delis-Kaplan's Executive Functions Scale). D-KEFS is a set of nine tests that can be used as a comprehensive system for mapping a wide range of higher and lower executive functions and cognitive processes in verbal

[3] Although in fact executive functions represent cognitive functions, the term cognitive functions is used to define the functions that process perceived stimuli (for instance, the higher order processes of induction, comparison, categorisation, etc.), that is, which process particular content.

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and non-verbal domains. The article analyses 1. the results of measuring executive functioning in three groups of pupils in D-KEFS (standard school children, gifted children and ethnic Roma children) and 2. selected issues in the Slovak adaptation of the test battery. Drawing on the example of the adaptation process, the authors illustrate how multidisciplinary and frequently complex the process is of converting test content not just into another language but also for a different culture. In this regard, the experience of the authors confirms that the adaptation of cognitive tests is a process that must take place on several qualitatively different levels (Malda et al., 2008) and, therefore, in order to be successful, multidisciplinary cooperation is necessary.

In the introduction of this editorial we outlined at least two basic lines that determine the focus of research in the applied dimensions of cognitive psychology and pedagogy at present. These are diagnostic and intervention lines. The articles in this special issue of the Journal of Pedagogy incline more towards the diagnostic than the intervention line. They focus on the current situation regarding research in this area. There is still a substantial number of studies that, despite referring to potential educational interventions based on the results of abilities assessment, remain within the scope of performance diagnostics. We assume though that without detailed understanding of some of the aspects related to the individual's cognitive and executive performance, one cannot design adequate intervention to correct and stimulate the deficits revealed. The articles in this issue thus outline current trends in identifying the causes of an individual's weak cognitive performance, which is seen as the basis for potential future intervention.

References

Adey, P. (2003). Changing minds. *Educational and Child Psychology, 20*(2), 19-30.

Adey, P., Shayer, M., & Yates, C. (1992). *Thinking science*. Philadelphia, PA: Research for Better Schools.

Arbitman-Smith, R., & Haywood, H. C. (1980). Cognitive education for learning-disabled adolescents. *Journal of Abnormal Child Psychology, 8*(1), 51-64.

Ashman, A. F., & Conway, R. N. F. (1989). Teaching planning skills in the classroom: the development of an integrated model. *International Journal of Disability, Development and Education, 36*(3), 225-240.

Ashman, A. F., & Conway, R. N. F. (1997). Cognition and cognitive concepts. In *An introduction to cognitive education: Theory and applications* (pp. 41–61). London, UK: Routledge.

Binet, A., & Simon, T. (1916). *The development of intelligence in the child. The development of intelligence in children.* Baltimore, MD: Williams & Wilkins.

Unauthenticated
Download Date | 2/6/16 11:05 AM

Blair, C., & Razza, R. P. (2007). Relating effortful control, executive function, and false belief understanding to emerging math and literacy ability in kindergarten. *Child Development, 78*(2), 647-663.
Budoff, M. (1987a). The validity of learning potential assessment. In C. S. Lidz (Ed.), *Dynamic assessment: An interactional approach to evaluating learning potential* (pp. 52-81). New York: Guilford Press.
Budoff, M. (1987b). Measures for assessing learning potential. In C. S. Lidz (Ed.), *Dynamic assessment: An interactional approach to evaluating learning potential* (pp. 173-195). New York: Guilford Press.
Buchel, F. P., & Scharnhorst, U. (1993). The learning potential assessment device (LPAD): discussion of theoretical and methodological problems. In J. H. M. Hamers, K. Sijtsma, & A. J. J. M. Ruijssenaars (Eds.), *Learning Potential assessment: Theoretical, methodological and practical issues* (pp. 13-18). Amsterdam: Swets, Zeitlinger.
Campione, J. C., & Brown, A. L. (1987). Linking dynamic assessment with school achievement. In C. S. Lidz (Ed.), *Dynamic assessment: An interactional approach to evaluating learning potential* (pp. 82-109). New York: Guilford Press.
Das, J. P. (1999). *PASS Reading Enhancement Program (PREP*). Edmonton, AB: J. P. Das Centre on Learning and Developmental Disabilities.
De Bono, E. (1991). *I am right, you are wrong. From this to the new renaissance: From rock logic to water logic.* UK: Penguin Books.
Dehn, M. J. (2008). *Working memory and academic learning: Assessment and intervention.* Hoboken, NJ: Jon Wiley & Sons.
Doidge, N. (2007). *The brain that changes itself: Stories of personal triumph from the frontiers of brain science.* US: Viking Press.
Drubach, D. (2000). *The brain explained.* Upper Saddle River, NJ: Prentice Hall Health.
Duckworth, A. L., & Seligman, M. E. P. (2005). Self-discipline outdoes IQ in predicting academic performance of adolescents. *Psychological Science, 16*(12), 939-944.
Dzuka, J., & Kovalcikova, I. (2008a). Dynamické testovanie latentných učebných schopností. *Československá psychologie*, *52*(4), 366-377.
Dzuka, J., & Kovalcikova, I. (2008b). Sociálne znevýhodňujúce prostredie a dieťa zo sociálne znevýhodňujúceho prostredia, pojem a definícia. *Československá psychologie*, *52*(6), 633-637.
Engelmann, S., & Carnine, D. (1991). *Theory of instruction: Principles and applications.* Eugene, OR: ADI Press.
Ferrara, R. A., Brown, A. L., & Campione, J. C. (1986). Children's learning and transfer of inductive reasoning rules: Studies of proximal development. *Child development*, *57*(5), 1087-1099.
Ferrer, E., McArdle, J. J., Shawitz, B. A., Holahan, J. N., Marchione, K., & Shawitz, S. E. (2007). Longitudinal models of developmental dynamics between reading and cognition from childhood to adolescence. *Developmental Psychology, 43,* 1460-1473.
Feuerstein, R. (1970). A dynamic approach to causation, prevention, and alleviation of retarded performance. In C. Haywood (Ed.), *Social-cultural aspects of mental retardation.* New York: Appleton Century Crofts.
Feuerstein, R., Feuerstein, R. S., Falik, L. H., & Rand, Y. (2002). *The dynamic assessment of cognitive modifiability: The learning propensity assessment device, theory, instruments, and techniques.* Jerusalem, Israel: ICELP Press.

Unauthenticated
Download Date | 2/6/16 11:05 AM

Feuerstein, R., Rand, Y., Hoffman, M. B., & Miller, R. (1980). *Instrumental enrichment*. Baltimore, MD: University Park Press.
Filickova, M., Kovalcikova, I., & Ropovik, I. (2015). The role of simultaneous and successive processing in EFL reading. *International Journal of Psychology*. Advance Online Publication.
Glaser, R. (1988). Cognitive science and education. In J. Crowley (Ed.), *International Social Science Journal, 40*(1), 21-44.
Greenberg, K. H. (2000). Attending to hidden needs: The cognitive enrichment advantage perspective. *Educational and Child Psychology: Psychological Influences upon Educational Intervention, 17*(3), 51-69.
Greenfield, P. M. (1997). You can't take it with you: Why ability assessments don't cross cultures. *American psychologist*, *52*(10), 1115-1124.
Guilford, J. P. (1977). *Way beyond the IQ*. Boston, MA: Creative Education Foundation.
Guthke J. (1993). Developments in learning potential assessment. In J. H. M. Hamers & K. Sijtsma (Eds.), *Learning potential assessment: Theoretical, methodological and practical issues* (pp. 43-67). Amsterdam: Swets & Zeitlinger.
Hansen, A. (2009). Basic conceptual systems (BCSs) – tools for analytic coding, thinking and learning: A concept teaching curriculum in Norway. *Thinking Skills and Creativity, 4*(3), 160-169.
Haywood, H. C. (1977). A cognitive approach to the education of retarded children. *Peabody Journal of Education, 54*(2), 110-116.
Haywood, H. C. (2004). From the editor: Current concepts in cognitive development and education: A topical issue. *Journal of Cognitive Education and Psychology, 4*(2), 181-182.
Haywood, H. C., Brooks, P. H., & Burns, M. S. (1992). *Bright Start: Cognitive curriculum for young children*. Watertown, MA: Charlesbridge.
Haywood, H. C., & Lidz, C. (2007). *Dynamic Assessment in Practice*. London: Cambridge University Press.
Haywood, H. C., & Tzuriel, D. (2002). Applications and challenges in dynamic assessment. *Peabody Journal of Education, 77*(2), 38-61.
Howard-Jones, P. (2010). *The teacher's handbook of twig: Minds, brains and teaching with immersive gaming.* Available at: www.lulu.com:NEnet.
Ihnot, C., Kilkelly, C., & Nichols, M. (2000). *Read naturally: Master's edition, reading level 5.8/6.0 (Blackline Masters*). Saint Paul, MI: Read Naturally.
Jitendra, A. K., & Kameenui, E. J. (1994). A review of concept learning models: Implications for special education practitioners. *Intervention in School and Clinic*, *30*(2), 91-98.
Karpov, Y. (2008). Do all dynamic assessment techniques assess learning potential? *Journal of Cognitive Education and Psychology*, *7(*3), 411-418.
Kirby, J. R., & Robinson, G. W. (1987). Simultaneous and successive processing in reading disabled children. *Journal of Learning Disabilities, 20*(4), 243-252.
Klauer, K. (1987). Criterion-referenced testing: The inference to the item pool. *Zeitschrift für differentielle und diagnostische Psychologie, 8,* 141-147.
Klauer, K. J., & Phye, G. D. (1995). *Fallbuch der klinischen Psychologie: Modelle psychischer Storungen. Einzelfallstudien zum Lehrbuch der klinischen Psychologie*. Germany: Hogrefe, Verlag fur Psychologie.

Unauthenticated
Download Date | 2/6/16 11:05 AM

Kolb, D. A., Boyatzis, R., & Mainemelis, C. (2000). Experiential learning theory: Previous research and new directions. In R. J. Sternberg, & L. F. Zhang (Eds.), *Perspectives on cognitive learning and thinking styles*. New Jersey: Lawrence Erlbaum.
Kozulin, A. (1999). Profiles of immigrant students` cognitive performance on Raven`s progressive matrices. *Perceptual and Motor Skills, 87*(3), 1311-1314.
Kulistak, P. (2003). *Neuropsychologie*. Praha: Portál.
Lebeer, J., Candeias, A., & Gracio, M. L. (2011). *With a different glance. Dynamic assessment and functioning of children oriented at development & inclusive learning*. Belgium: Garant Publishers.
Lidz, C. S. (1992). Dynamic assessment: Some thoughts on the model, the medium, and the message. *Learning and individual differences, 4*(2), 125–-36.
Lovett, M. W., Lacerenza, L., & Borden, S. B. (2000). Putting struggling readers on the PHAST track: A program to integrate phonological and strategy-based remedial reading instruction and maximize outcomes. *Journal of Learning Disabilities, 33*(5), 458-476.
Luther, M., & Wyatt, F. (1996). A comparison of Feuerstein's method of (LPAD) assessment with conventional IQ testing on disadvantaged North York high school students. In M. Luther, E. Cole, & P. Gamlin (Eds.), *Dynamic assessment for instruction: From theory to application* (pp. 168-181). Ontario: Captus Press.
Malda, M., Van de Vijver, F. R., Srinivasan, K., Transler, C., Sukumar, P., & Rao, K. (2008). Adapting a cognitive test for a different culture: An illustration of qualitative procedures. *Psychology Science Quarterly, 50*(4), 451-468.
Marzano, R. J. (1998). *A theory-based meta-analysis of research on instruction*. Aurora, CO: Mid-continent Regional Educational Laboratory.
Meeker, M. (1965). A procedure for relating Stanford Binet behavior samplings to Guilford's structure of the intellect. *Journal of School Psychology, 3*(3), 26-36.
Miles, D., & Forcht, J. P. (1995). Mathematics strategies for secondary students with learning disabilities or mathematics deficiencies: A cognitive approach. *Intervention in School and Clinic, 31*, 91-96.
Minnaert, A. (2002). Alternative assessment of students' domain–specific learning competencies in the transition of secondary to higher education. In G. M. Van der Aalsvoort, W. C. M. Resing, & A. J. J. M. Ruijssenaars (Eds.), *Learning potential assessment and cognitive training: Actual research and perspectives in theory building and methodology* (Volume 7, pp. 335-351). Amsterdam: JAI.
Murphy, R. (2007). *Exploring a meta–theoretical framework for dynamic assessment and intelligence*. Dissertation thesis. University of Pretoria.
Nyborg, M. (1993). Pedagogy: The study of how to provide optimum conditions of learning for persons who may differ widely in pre-requisites for learning. Norway: Nordisk undervisningsforlag.
OECD. (2007). OECD Factbook 2007 - Economic, Environmental and Social Statistics. OECD.
Paour, J. L., & Soavi, G. (1992). A case study in the induction of logic structures. In H. C. Haywood, & D. Tzuriel (Eds.), *Interactive Assessment* (pp. 419-442). New York: Springer.
Primi, R., Ferrão, M. E., & Almeida, L. S. (2010). Fluid intelligence as a predictor of learning: A longitudinal multilevel approach applied to math. *Learning and Individual Differences, 20*(5), 446–451.

Unauthenticated
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Rand, Y., & Kaniel, S. (1987). Group administration of the LPAD. In C. S. Lidz (Ed.), *Dynamic assessment: an interactional approach to evaluating learning potential* (pp. 196-214). NewYork: The Guilford Press.
Resing, W. C. M. (2013). Dynamic testing and individualized instruction: Helpful in cognitive education? *Journal of Cognitive Education and Psychology, 12*(1), 81-95.
Resing, W. C. M., Roth, J. M., & Van der Werf, T. J. M. (2002). Learning potential assessment and cognitive training in inductive reasoning: emergent relationship? In G. M. Van der Aalsvoort, W. C. M. Resing, & A. J. J. M. Ruijssenaars (Eds.), *Learning potential assessment and cognitive training: actual research and perspectives in theory building and methodology* (Volume 7, pp. 175-208). Amsterdam: JAI.
Ropovik, I. (2014). Do executive functions predict the ability to learn problem-solving principles? *Intelligence, 44*, 64-74.
Sawyer, R. K. (2006). Educating for innovation. In A. Craft, & R. Wegerif (Eds.), *The International Journal of Thinking Skills and Creativity, 1*(1), 41-48.
Sousa, D. (2001). *How the brain learns*. Thousand Oaks, California: Corwin Press.
Stanovich, K. E., Cunningham, A. E., & Freeman, D. (1984). Intelligence, cognitive skills and early reading progress. *Reading Research Quarterly, 14*, 278-303.
Sternberg, R. J. (2013). Introduction to the special issue. *Journal of Cognitive Education and Psychology, 12*, (1), 4-5.
Sternberg, R. J., & Grigorenko, E. L. (2002). *Dynamic Testing: The nature and measurement of learning potential*. Cambridge: Cambridge University Press.
Stevenson C. E. (2012). *Puzzling with potential. Dynamic testing of analogical reasoning in children* (Doctoral dissertation, Leiden University). Amsterdam, the Netherlands: Ipskamp Drukkerij.
Swanson, H. L., & Lussier, C. M. (2001). A selective synthesis of the experimental literature on dynamic assessment. *Review of Educational Research, 71*(2), 321-363.
Taub, G., Floyd, R. G., Keith, T. Z., & McGrew, K. S. (2008). Effects of general and broad cognitive abilities on mathematics. *School Psychology Quarterly, 23(2),* 187-198.
Tokuhama-Espinosa, T. (2010). *Mind, brain and education science*. New York: W.W. Norton Company.
Tzuriel, D. (2001). *Dynamic assessment of young children*. New York, NY: Kluwer Academic/Plenum Press.
Tzuriel, D. (2002). Cognitive education: The menace and the hope. In G. M. Van der Aalsvoort, W. C. M. Resing, & A. J. J. M. Ruijssenaars (Eds), *Learning potential assessment and cognitive training: actual research and perspectives in theory building and methodology* (Volume 7, pp. 355-363). Amsterdam: JAI.
Tzuriel, D., & Klein, P. S. (1987). Assessing the young child: Children's analogical thinking modifiability. In C. S. Lidz (Ed.). *Dynamic assessment: an interactional approach to evaluating learning potential* (pp. 268-287). New York: Guilford Press.
Tzuriel, D., & Shamir, A. (2007). The effects of peer mediation with young children (PMYC) on children's cognitive modifiability. *British Journal of Educational Psychology, 77*, 143-165.
Ukrainetz, T. W., Harpell, S., Walsh, C., & Coyle, C. (2000). A preliminary investigation of dynamic assessment with Native American kindergartners. *Language, speech and hearing services in schools*, *31*(2), 142-154.
Vygotsky, L. (1978). *Mind in society*. Cambridge, MA: Harvard University Press.

Unauthenticated
Download Date | 2/6/16 11:05 AM

Walsh. K. (1978). *Neuropsychology: A clinical approach*. New York: Churchill Livingston.
Wolf, O. T., Schommer, N. C., Hellhammer, D. H., Reischies, F. M., & Kirschbaum, C. (2002). Moderate psychosocial stress appears not to impair recall of words learned four weeks prior to stress exposure. *Stress: The International Journal on the Biology of Stress, 5*(1), 59-64.

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