43rd Annual IARLD Conference for Research in Learning Disabilities

Programme

23rd June 2019 Pre-Conference Activities
24th- 25th June 2019 Conference

Conference Center of Aldemar Knossos Royal Hotel, Hersonissos, Crete, Greece
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Maps
Location and Travelling Information

The IARLD 2019 will be held in the island of Crete, Greece. Crete is the 5th largest island in the Mediterranean, and one of the most popular vacation destinations in Greece, with more than 3 million visitors during the summer months every year. The island’s tourism infrastructure caters to all tastes, including a very wide range of accommodation. Visitors reach the island via two international airports in Heraklion and Chania (international charter and domestic flights starting May) or by boat to the main ports of Heraklion and Chania.

Crete was the home of the oldest civilization in Europe (2700-1420 BC), the Minoan Civilization who gave the name to the continent (Europa). Popular tourist attractions include the archaeological sites of the Minoan civilization, the Venetian old city and port of Chania, the Venetian castle at Rethymno, the gorge of Samaria, the islands of Chrysi, Elafonisi, Gramvousa, Spinalonga and the Palm Beach of Vai, which is the largest natural palm forest in Europe. The island has a number of gorges, such as the Samariá Gorge and Imbros Gorge.

Climate
Crete stays warm the longest - you can swim off its southern coast from mid-April to November. In September the average air temperature is 24°C, with an average of 2.4 days of rain. For the latest weather forecast please visit: http://www.poseidon.hcmr.gr.

Electricity
220 volts/50Hz. Plugs are 2 pronged and rounded, bring an adapter for your shaver, hair drier, Walkman, laptop, etc. Mainland Europe’s plugs mostly the same except for the UK's which are 3 pronged and flat. An 8-12-foot extension cord will come in handy also but you can buy this locally. To avoid electrocution, there are no wall outlets in Greek bathrooms.

Currency & Credit Cards
The currency in Greece is the euro, € (EUR). Banks exchange all major currencies in cash, travellers' cheques or Eurocheques. Post offices exchange cash but not travellers’ cheques. Travel agencies and larger hotels change cash and travellers cheques. Banknote exchange machines can be found in most tourist areas. All upmarket shops, restaurants and hotels accept credit cards. Visa, MasterCard (Access) and Eurocard are the most widely accepted. Most banks have ATMs where you can access your debit or credit account.

Tipping
Tips and taxes are included in the price but you should normally tip 10% or according to your appreciation.

Hersonissos
The conference is taking place at Aldemar Knossos Royal Hotel in Hersonissos which is located about 25 km from Heraklion. Hersonissos is one of the most popular tourist resorts in Crete
because It has to offer a lot of options for day and night. During the day you can enjoy nice beaches or water parks, drink your coffee in the seaside road, visit the local archaeological sites, stroll in the villages of Ano Hersonissos, Piskopiano and Koutouloufari, trek in the gorges of Avdou valley and much more. At the same time, Hersonissos offers strong nightlife with the nightclubs of the coastal road gathering most people.

**Transportation options from Heraklion to Aldemar Knossos Royal Hotel**

By taxi: The most convenient method to get to the conference hotel/venue from all locations (airport / seaport / downtown) is to use a taxi. There are taxis as you exit the airport, harbour, and various locations downtown. The ride to Aldemar Knossos Royal Village is about 30 minutes and should cost approximately 35 Euros depending on traffic.

By car: You can find and rent a car from the airport / seaport / downtown area, get to the highway (follow signs to the National Road). On the highway, head East and follow the signs to Agios Nikolaos and/or Hersonissos.

By bus: Go to the Heraklion Bus station, which is located very close to the seaport. Take the bus to Hersonissos. Buses run every 30mins between 06:30-23:00 and the fare is about 3 Euros. The ride takes around 45 mins. Once you arrive in Hersonissos, you need to take a taxi to the hotel/conference venue.
Welcome from the Conference Hosts

The 43rd Annual Conference of the International Academy for Research in Learning Disabilities (IARLD) held in Hersonissos of Heraklion, the capital city of Crete which is one of the largest and most beautiful islands of Mediterranean Sea.

The organizing committee would like to welcome you in Hersonissos, and we are glad to host here this prestigious conference which aspire to promote the research and practice in the area of learning disabilities. Well known researchers and educators around the world are participating in the conference and they are going to share with us innovative and modern trends of the recent enquiry in a variety of areas in learning disabilities. Cross-cutting edge research in learning disabilities will be presented in the areas of reading, writing, mathematics, science across different cultures, languages and orthographic systems as well as issues on assessment, identification and remediation across different age groups.

In particular we are delighted and honored that professor David Share from University of Haifa will present the William M. Cruickshank Memorial Lecture with the inspiring title of “Climbing out of the Anglocentric, Eurocentric and Alphabetocentric trenches: A global perspective on writing system diversity and its consequences for research in reading and reading disability”. It is anticipated a constructive dialogue on the conference issues among the participants and a reflation of the relationships between the members of IARLD as well as warm interaction between them for generating new collaborations.

One more time we welcome you in Crete and hope to enjoy both the academic inspiration of the conference and the spirit of Greek hospitality.

With best wishes

The Organizing Committee

Angeliki Mouzaki, Department of Primary Education, School of Education, University of Crete
George Manolitsis, Department of Preschool Education, School of Education, University of Crete
Thank you

The Organizing Committee wishes to thank each of you for attending, participating and sharing ideas and expertise. We certainly hope that the 43rd IARLD Conference in Hersonissos, Crete Greece provides a great forum for scientific exchanges, fruitful discussions and social interaction.

We also would like to give special thanks to:

- All presenters for bringing their expertise and sharing their latest work
- Professor David Share for addressing the Bill Cruickshank Memorial Lecture
- the Committee of Reviewers (George Manolitsis, Georgios Sideridis and Angeliki Mouzaki) for reviewing the Abstracts for the Conference
- Lynn Meltzer for assisting the organization of this Conference Program
- Eleni Alexopoulou and the President’s office for their valuable assistance throughout the Conference preparation process
- Athena Kiriakaki-Sfakaki for guiding the sightseeing tour of Heraklion and Archaeological Museum for Conference participants
- Maria Leventi and the Diazoma team for their expert organizational support
General Information
43rd Annual International Academy for Research in Learning Disabilities
IARLD Conference

Dates of the Conference:
23rd – 25th June 2019
23rd June Pre-Conference Activities
24th- 25th June Conference

Conference Venue:
Conference Center of Aldemar Knossos Royal Hotel, Hersonissos, Crete, Greece.

Conference Chairs:
Angeliki Mouzaki & George Manolitsis - School of Education, University of Crete

For questions contact:
Conference Chair: Angeliki Mouzaki, amouzaki@edc.uoc.gr
Conference Coordinator: Diazoma Conferences and Events, (www.diazoma.net)
Maria Leventi, Tel. +30 2810321494, Mob. +30 6908215112, info@diazoma.net

Registration Fees 01/06/2019-26/06/2019
Active Member: € 380
Retired Member: € 290
Non- Member: € 400
Student: € 140

The Registration Fee includes the participation for all sessions of the Conference, the conference kit, coffee breaks and lunches for the 24th and 25th of June, according to the Scientific Program of the Conference and the Welcome Reception.
The conference secretariat will be maintained by “Diazoma Conference and Events”, which takes care of:

- Registration to the conference and payments
- Abstract submission
- Reservation for hotels
- Organization of social events (welcoming reception, conference dinner and excursion),
- Transportation from/to local hotels to the conference venue.

Diazoma Conferences and Events
Patr. Grigoriou E' 6, 71305, Heraklion, Crete, Greece
www.diazoma.net, www.diazoma.eu
Email: info@diazoma.net, Tel. +30 2810321494
Mob. +30 6908215112

Conference Website: www.iarld.com/current-conference-2
Remarkable, monuments on the historical center of Iraklion, are dated in the period of the Venetian occupation, which lasted from 1210 until 1669 a. C. The Morozini’s fountain, the St. Marko’s Basilika, Venetian Lotzia, Fountain of Sacrento and St. Titus’ Church. The town was named then Candia and Crete was often mentioned as the island of Candia.

The masterpieces of Cretan and especially of Minoan Civilization, finds from excavations carried out in all parts of Crete, are displayed in the Iraklion Archeological Museum forming a collection of unique value.

The first Museum was built between 1904 and 1912 and it was in use until 1937 when work began on the present earthquake-proof building. The most impressive exhibits are these from the minoan palaces of Knosos, Festos, Malia and Zakros. Most of the minoan frescoes come from the palace and the houses of Knosos as is the cup-bearer from the procession fresco (1400 b.C.).

Among the most important exhibits in the museum are:

- the ‘’snake goddess’’ made of faience, from Knosos
- the bull’s-head rhyton carved in a black steatite, fine example of the skill of the minoan lapidaries
- the gold pendant from Malia, in the shape of two bees storing away a drop of honey
- the famous clay Festos Disc, featuring on both sides hieroglyphic signs. The script and the unknown language of Festos disc, were the script and the language of the Minoans
- a variety of stone vessels from Zakros, like the rhyton of rock crystal

In Iraklion museum there are also collections of sealstones, statues, sarcophagus, copper, stone, and clay offerings raw materials

Mrs. Athena Kiriakaki-Sfakaki, volunteer professional Guide, member of Professional Guide’s Union of Crete and Santorini, will be your guide on Sunday, June 23rd.
# 43rd Annual IARLD Conference Program

## Sunday 23rd June 2019

### Pre-Conference Schedule

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>12:30 - 16:00</td>
<td>Heraklion &amp; Archaeological Museum Sight Seeing Tour</td>
</tr>
<tr>
<td>17:00 - 19:00</td>
<td>Registration – Entrance hall Hermes Rm</td>
</tr>
<tr>
<td>17:00 - 19:00</td>
<td>IARLD Executive Board Meeting – Orpheas Meeting Room</td>
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<tr>
<td>19:30 - 21:00</td>
<td>Executive Board Dinner</td>
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### Monday 24th June

## Conference Day 1 Schedule

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>8:00 – 8:30</td>
<td>Registration – Entrance hall Hermes Rm</td>
</tr>
<tr>
<td>8:30 - 8:45</td>
<td>Welcome from Annual Conference Chair and IARLD President</td>
</tr>
<tr>
<td>8:45 – 10:45</td>
<td><strong>Symposium 1 - Hermes Meeting Room</strong></td>
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<tr>
<td></td>
<td>MELTZER L., MASON L. DUNSTAN-BREWER J., KOVALČÍKOVÁ I., DAVIS K., LAMPIRIANOU L., SUSANNAH C., Executive Function and Academic Performance: Cross-cultural Comparisons</td>
</tr>
<tr>
<td>10:45-11:00</td>
<td>Coffee Break</td>
</tr>
<tr>
<td>11:00 – 13:00</td>
<td><strong>Symposium 2 - Hermes Meeting Room</strong></td>
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<tr>
<td>13:00 – 14:00</td>
<td>Lunch</td>
</tr>
<tr>
<td>14:00 -16:00</td>
<td><strong>Symposium 3 - Hermes Meeting Room</strong></td>
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<tr>
<td></td>
<td>REED D. – SCANLON D., ALOE A., REEGER A., Researching Summer Programs for Students With and At Risk for Reading Disabilities</td>
</tr>
<tr>
<td>16:00 – 16:30</td>
<td><strong>Marjorie Montague Dissertation Award - Hermes Meeting Room</strong></td>
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<tr>
<td></td>
<td>NELSON, G. The effects of early numeracy interventions for students in preschool and early elementary: A meta-analysis</td>
</tr>
<tr>
<td>16:30-18:30</td>
<td><strong>Poster Sessions and Awards - Hermes Lobby</strong></td>
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<td></td>
<td>Welcoming Reception</td>
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<tr>
<td></td>
<td>Janette Klinger IARLD Conference Poster Award</td>
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<tr>
<td>19:30 - 22:00</td>
<td>IARLD Conference Banquet Dinner</td>
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</table>
### Tuesday 25th June
#### Conference Day 2 Schedule

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
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<tbody>
<tr>
<td>8:00 – 8:30</td>
<td>Coffee – Entrance hall Hermes Rm</td>
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<tr>
<td>8:30 – 8:45</td>
<td>Conference Announcements</td>
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<tr>
<td>8:45 – 10:30</td>
<td><strong>Symposium 4 - Hermes Meeting Room</strong></td>
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<tr>
<td></td>
<td>GRUNKE M., KARNES J., HISGEN S., BARWASSER A., KNAAK T., SPERLING M.,</td>
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<tr>
<td></td>
<td>Gamification as a means to engage students with learning disabilities in building their academic skills</td>
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<tr>
<td>10:30 - 10:45</td>
<td>Coffee Break</td>
</tr>
<tr>
<td>10:45 – 12:30</td>
<td><strong>Symposium 5 - Hermes Meeting Room</strong></td>
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<td></td>
<td>GEVA E., RAMIREZ G., RUSSAK S., GOTTARDO A., PADILLA P., FARNIA F.,</td>
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<tr>
<td></td>
<td>An International Perspective on Reading and Language Difficulties in Bi- and Multilingual Learners</td>
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<tr>
<td>12:30-13:30</td>
<td>Lunch</td>
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<tr>
<td>13:30-14:45</td>
<td><strong>Round Table Discussions- Meeting Rooms 1 - 4</strong></td>
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<tr>
<td></td>
<td>• EVMENOVA A., MASON L., REGAN K. - Meeting Room 1</td>
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<td></td>
<td>Handwriting or Typing: Controversy in Writing Instruction</td>
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<td></td>
<td>• HEIMAN T., OLENIK-S.D. - Meeting Room 2</td>
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<td></td>
<td>Cyber-Victimization among Higher Education Students with and without LD as Related To Academic and Personal Factors</td>
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<tr>
<td></td>
<td>• ANASTASIOU D. - Meeting Room 3</td>
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<td></td>
<td>Reading, Math, and Science Performance across PISA Countries: Relationshipw with Socio-Economic Factors and Special Education</td>
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<td></td>
<td>• SCANLON D., BERKELEY S., CALHOON M., GROSCH M. - Meeting Room 4</td>
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<td></td>
<td>“Appropriateness” of Special Education for Students with LD</td>
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<tr>
<td>14:45 – 15:45</td>
<td><strong>William M. Cruickshank Memorial Lecture- Hermes Meeting Room</strong></td>
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<td></td>
<td>SHARE, D.</td>
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<td>Climbing out of the Anglocentric, Eurocentric and Alphabeticentric trenches: A global perspective on writing system diversity and its consequences for research in reading and reading disability</td>
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<tr>
<td>15:45 – 17:00</td>
<td>Coffee Break</td>
</tr>
<tr>
<td>16:00-17:45</td>
<td><strong>Symposium 6 - Hermes Meeting Room</strong></td>
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<td></td>
<td>Early LD identification and remediation</td>
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<tr>
<td>17:45-18:30</td>
<td><strong>Think Tank and Business meeting - Hermes Meeting Room</strong></td>
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</tbody>
</table>
This study is a meta-analysis that examined the effectiveness of early numeracy interventions for preschool, kindergarten, and first-grade students, including students with disabilities or those at-risk for math difficulty (MD). A total of 34 studies met inclusion criteria for this meta-analysis, with 52 treatment groups. The average weighted effect size for the interventions with two outliers removed was moderate ($g = 0.64; 95\% \text{ CI} [0.52, 0.76]$). Results of the final meta-regression model predicted larger treatment effects for interventions that included counting with correspondence and were 8 weeks or shorter. The results of the meta-regression also showed that interventions were more effective for students with lower levels of risk for MD compared to typically-achieving (TA) students; interventions were less effective for students with higher levels of risk for MD compared to TA students. During this session, future research and implications for educators implementing early numeracy interventions are discussed.
Climbing out of the Anglocentric, Eurocentric and Alphabetocentric trenches: A global perspective on writing system diversity and its consequences for research in reading and reading disability

David L. Share, Department of Learning Disabilities, Haifa University
Edmond J. Safra Brain Research Center for the Study of Learning Disabilities

Abstract

In recent years, there has been a growing recognition that studies of human behavior, even in many domains traditionally regarded as universal and invariant, are actually subject to substantial cultural and contextual variation (see, e.g., Henrich, Heine, & Norenzayan, 2010). Concerns regarding generalizability have also been voiced by researchers in comparative linguistics (Evans & Levinson, 2009) who have questioned the underlying assumption of structural universals common to all human languages. The science of reading has also witnessed some recent rethinking (Frost, 2012, Share, 2008, 2014). Nonetheless, most current theories of reading and dyslexia remain deeply entrenched in relatively narrow Anglocentric and Eurocentric/alphabetocentric perspectives. Even the two dominant theoretical frameworks for describing cross-script diversity – Orthographic Depth (Katz & Feldman 1983; Katz and Frost 1992; Frost, 2005) and Psycholinguistic Grain Size Theory (Ziegler & Goswami 2005), give little or no consideration to non-European alphabets or non-alphabetic scripts, and promote a one-dimensional view of script variation (spelling–sound consistency).

Around the globe, however, a majority of the world's 100 million dyslexics struggle with non-European, non-alphabetic orthographies such as abjads (e.g., Arabic), abugidas (e.g., Devanagari), or morpho-syllabaries (e.g., Chinese). Consideration of the full spectrum of the world’s writing systems reveals multiple dimensions of writing system complexity, each liable to create obstacles for the developing reader. Peter Daniels and I (Daniels & Share, 2018) have enumerated ten dimensions of writing system complexity: historical change, omission of phonological elements, spelling constancy despite morphophonemic alternation, dual-purpose letters, linguistic distance, graphic considerations, ligaturing, visual complexity, non-linearity, and symbol inventory size. We also consider how these ten dimensions might affect reading and reading difficulties.

This more wide-angled approach not only offers dyslexia researchers a richer picture of writing system diversity and complexity but is also likely to provide fresh insights into dyslexia research in all orthographies—well-studied ones, less well studied ones, and those yet to be studied.

References


Behavioural and Brain Sciences, 33, 61-135.


Biography

Professor David Share received his PhD in Education and Psychology from Deakin University, Geelong, Australia. He is currently Professor and Chair of the Department of Learning Disabilities at the University of Haifa and a member of the Edmond J. Safra Brain Research Center for the Study of Learning Disabilities in Haifa, Israel. His field of research is the early development of reading, with an emphasis on variation between children in reading ability, and with special attention to reading difficulties (dyslexia) and the role of writing system variation in early reading acquisition.

Professor Share is internationally renowned for his pioneering studies and bold theoretical proposals, in particular the self-teaching hypothesis for orthographic learning and his devastating critique of relying on research conducted in the English language with its unusually inconsistent orthography.
Symposium 1
Executive Function and Academic Performance: Cross-cultural Comparisons
Lynn Meltzer, Ph.D., Chair Linda Mason, Ph.D., Discussant

Symposium Presenters:

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Symposium Overview

Executive Function and Academic Performance: Cross-cultural Comparisons
Lynn Meltzer, Chair Linda Mason, Ph.D., Discussant

In 21st century schools across the globe, the increased pace, pressure, and expectations have resulted in a higher prevalence of students who are struggling with the academic curriculum due to executive function weaknesses. Across the grades, students are now required to complete lengthy reading and writing assignments as well as online research for long-term projects, all tasks that rely heavily on executive function processes. This symposium will address a range of intervention approaches across age- levels, contexts, and cultures that emphasize metacognitive awareness and executive function processes in relation to academic performance. Discussion will address different approaches for promoting these executive function processes, in particular, organization, cognitive flexibility, and self-monitoring. There will be an emphasis on the importance of moving towards an educational paradigm that addresses the interactions among executive function, effort, self-concept, and academic performance.

Presentation 1

Metacognition and Executive Function: The Keys to Improved Academic Performance
Lynn Meltzer, Kim Davis, Lasonis Lamprianou
Research Institute for Learning and Development (ResearchILD) and University of Cyprus

Background and Importance

Academic success in our technologically-oriented society is increasingly dependent on students’ metacognitive awareness as well as their ability to plan their time, organize and prioritize ideas, think flexibly, monitor their progress, and self-regulate (Meltzer, 2014, 2018; Naglieri & Goldstein, 2014). In our previous studies, we have investigated the relationships among students’ metacognitive awareness, academic self-concept, and strategy use as well as their interactions with effort and academic performance (Meltzer, Reddy et al, 2004a,b,c; Meltzer, Reddy, Basho, Kurkul, 2015). Our findings have shown that a cyclical relationship connects these executive function processes, in particular cognitive flexibility, with effort, motivation, and academic self-concept, all attributes that build resilience and academic success in students with learning difficulties (Meltzer, Reddy, Basho, & Kurkul, 2014, Meltzer, Reddy &Sayer, 2015; Sayer, Meltzer, Reddy, & Stacey, 2015).
Objectives
The current study focused on an executive function intervention for students in grades 6-8 for whom multi-step school assignments are the core of the academic curriculum. Teachers were trained to teach their students metacognitive strategies as well as strategies for planning their work, managing their work time, and self-reflecting. Our analyses focused on the effects of strategy instruction on students’ approach to more complex school assignments such as long-term reading and writing assignments as well as projects that typically involve lengthy reading and writing as well as time management. Teachers were trained to teach the “Know Yourself” as well as the “Planning and Organizing” strategies from the SMARTS Online Executive Function Curriculum (Meltzer, Greschler, Kurkul, Stacey, & Ross, 2015; www.smarts-ef.org). Students learned to understand their profiles of strengths and weaknesses, to plan their time, and to organize their workloads.

Methods
The sample for the current study comprised 360 12-13 year old 6th, 7th, and 8th graders in a suburban New England school. Eighty six of these students were receiving special education services in school for diagnosed learning and/or attention problems. Our evaluation measures included a battery of student questionnaires, the MetaCOG-R Survey System (Meltzer, Reddy, et al., 2004a, b, c; Meltzer, Reddy, & Sayer, 2014) which was administered to students at the beginning and end of the school year. In addition, classroom observations and teacher interviews were conducted and standardized test data was collected for students. Mixed methods analytic approaches were used, comprising quantitative as well as qualitative methods of analysis.

Results
Our findings indicated that students’ metacognitive awareness increased and that they reported higher levels of effort on their schoolwork after they were taught executive function strategies. The strongest increases in effort were evident on reading and writing assignments as well as long-term projects, all core components of the curriculum for 6th-8th graders. Students were also more strategic in setting goals for long-term projects, developing plans for working on these projects, organizing the information, and checking their work.

Qualitative analysis indicated that the students also showed stronger metacognitive awareness and an increased understanding of their strengths and weaknesses, a critical component of academic success.

Discussion and Conclusions
Discussion will focus on our findings that explicitly teaching executive function strategies in the context of the academic curriculum is beneficial for all students and is essential for students with
learning and attention difficulties. Discussion will also address the challenges of building continuity across teachers and content areas so that students sustain their strategy use during classwork, homework, study times, and tests.

Presentation 2

Metacognitive Awareness in Early Childhood: The First Step for Promoting Executive Function Processes and Academic Success

Julie Dunstan-Brewer,(Cantab.) & Susannah Cole, reFLEXions™ and The Reading Clinic

Background and Importance

Academic curricula have placed increasing demands on students to perform complex tasks at earlier and earlier stages of development. In the higher grades, success with such multifaceted tasks relies heavily on students’ metacognitive awareness, as well as their effectiveness in using executive function strategies (Meltzer, 2013, 2014; Meltzer, Dunstan-Brewer & Krishnan, 2018). In early childhood, there is a mounting evidence of associations between emerging executive function processes and early academic skills, particularly mathematics (Best, Miller & Naglieri, 2011; Clark, Sheffield, Wiebe, & Espy, 2013; Dunstan-Brewer & Cole, 2018; Viterbori, Traverso & De Franchis, 2015; Willoughby, Kupersmidt & Voegler-Lee, 2012). There is also increasing focus on the early development of executive function processes as the basis for academic success (Center on the Developing Child, 2011; Diamond, 2016). Investigators have begun to explore characteristics of the effective approaches to promoting executive function in early childhood (Diamond & Ling, 2016; Dunstan-Brewer & Cole, 2018). However, there is little evidence regarding the defining elements of interventions that specifically promote metacognitive awareness in early childhood as the foundation for key executive function processes.

Objectives

The primary aim of our recent series of investigations is to explore early associations between metacognition, mindset choices, executive function processes and emerging academic skills. As part of this set of investigations in Bermuda, we have examined preschoolers’ metacognitive conceptions about the brain and learning. In an early study, 108 children were interviewed upon entry into preschool. Over one-third of the participants were able to label a picture of the brain; 58% knew the location of the brain; and 38% were able to articulate one or more functions of the brain (Dunstan-Brewer & Cole, 2018). Results confirmed that preschool children are ready to learn about the brain as a basis for teaching executive function strategies. In the current study, 56 children participated in an 8-unit Flexible Mindsets intervention designed to increase metacognitive knowledge and provide positive mindset messages. The Flexible Mindsets resource kit includes professional exchange, children’s stories, parent handouts, an educators’ guide and 8 units of coaching and mentoring. Our objective was to evaluate the effectiveness of
the intervention and to begin to identify key characteristics of effective approaches to promoting metacognition in early childhood.

**Methods**

Participants in the current study were 213 children from 10 public preschools in Bermuda. A total of 56 children received the Flexible Mindsets intervention. A further 61 children received an alternative intervention designed to promote phonological skills. The control group consisted of the 96 children who received neither intervention. Towards the end preschool, the *Metacognitive Awareness Preschool Survey (MAPS)* scale was administered to children in all 3 groups. The MAPS is a 17-item interview designed to assess: metacognitive knowledge; vocabulary regarding key executive function processes; and mindset messages. Educators also recorded samples of new language heard in the classroom. Throughout the process, children’s conceptions were also assessed using qualitative methods such as inquiry-based posters regarding the specific learning objectives of each unit.

**Results**

Analysis indicated that children in the Flexible Mindsets scored significantly higher on the MAPS than children in the comparison groups. The intervention group possessed deeper metacognitive awareness, as compared to children who received the alternative intervention, as well as those in the control group. Responses were better developed on items related to: knowledge about the brain; generating solutions to problems; and responding to mistakes. Qualitative data revealed that, when given direct instruction, preschool children can: produce sophisticated responses about brain functions; identify their personal strengths; understand rudimentary vocabulary related to key executive function processes; and imagine multiple functions for objects.

**Discussion and Conclusions**

We will discuss promising principles for teaching metacognition and integrating positive mindset messages in early childhood settings. We will present challenges in ensuring fidelity across settings and fully engaging all educators in the process. In early childhood, questions remain regarding the nature of relationships between metacognition, resiliency, executive function processes and academic progress. Key questions remain: *How do early mindset messages interact with metacognitive development? How do connections between metacognition and executive function processes evolve over time?* and *As children develop throughout early childhood, how do differences in emerging metacognitive awareness and mindsets impact academic success?*
Presentation 3

From Word to Text Comprehension: Stimulation of Executive Function Processes within a Language Curriculum
Iveta Kovalcikova- University of Presov, Slovak Republic and Pedagogical University, Cracow, Poland

Background and Importance
Research findings have shown the important role of executive function processes in controlling the integration of visual and linguistic information, and in the automatic recall of linguistic skills during reading (Altemeier, Abbott, & Berninger, 2008).
Specifically,
1. the capacity of working memory is critical for higher levels of comprehension and for integrating knowledge (Daneman & Carpenter, 1980; Just & Carpenter, 1980; Cain, Oakhill, & Bryant, 2004; Hannon & Frias, 2012);
2. the reader’s attentional control is crucial for decoding and reading comprehension (Samuels, 2013);
3. the processes of executive control are involved in cognitive planning—how the reader plans, directs, selects, and organizes available cognitive structures and processes to comprehend (Gaskins, Satlow, & Pressley, 2007);
4. the roles of metacognition and self-regulation are important for monitoring and controlling reading comprehension (Larkin, 2010).

A domain-specific program (EXEFUN-SLOV) aimed at stimulation of executive function processes in underperforming children was developed and evaluated during this study. The program was blended and included the Slovak language (L1) curriculum as well as metacognitive stimulation using the SMARTS metacognitive curriculum (Meltzer, Greschler, Stacey et al., 2015)

The major goal of the study was to develop evidence-based information about how executive function processes in low performing children can be improved through a domain specific intervention program.

Methods
120 children aged 9-11 years with poor school performance participated in this study. In Group 1 (experimental group), children received a pretest, executive function stimulation relevant program, and posttest. In Group 2 (control group 1 – parallel program), children received a pretest, parallel intervention, and a posttest. In Group 3 (control group 2 – no intervention), children received a pretest and a posttest, so that possible changes in executive function processes could be evaluated without special intervention. The groups were matched on the basis of school, class, gender, school achievement, and pre-tests results.
The intervention program consisted of a cognitive stimulation model which included:

- L1 curriculum
- SMARTS executive function strategies (Meltzer, 2018; Meltzer, Greschler, et al., 2015)

Measures: In order to measure students’ executive function processes, the Delis-Kaplan Executive Function System (D-KEFS) was used; specifically, the following subtests: (1) D-KEFS Trail-Making Test, (2) D-KEFS Design Fluency, (3) D-KEFS Verbal Fluency Test, (4) D-KEFS Color-Word Interference, (5) D-KEFS Tower of Hanoi). Students were tested individually, within one session lasting approximately 60 minutes.

**Results**

Preliminary results in the experimental groups indicated significant differences in cognitive flexibility in relation to verbal fluency and design fluency measures on the D-KEFS.

**Discussion and Conclusionss**

Findings indicated that short-term stimulation of thinking skills, cognition, and executive function processes, is possible using a tailor-made intervention program.

Focus on self-assessment, self-regulation, attentional control, metacognitive awareness, and strategy use, in combination with peer mediation, could serve as a structural principle for intervention. The findings have implications for the following:

- the concepts can be taught whilst cognitive and executive functions are being stimulated within the curricular framework – so that the content and process of learning are explicitly and implicitly emphasized,
- that the mental capabilities of children can be mediated,
- that children can be taught to live in a “thinking” society
- that children can gain control over their thinking processes and thus develop metacognition.
Symposium 2

Learning Disabilities in Reading: From Assessment to Remediation Submitted Symposium

Georgios D. Sideridis

The goal of the present symposium is to present information related to reading competency in students with and without learning disabilities ranging from issues related to accurate assessment, to effective interventions. The first presentation by Manolitsis et al. targets at identifying predictors of reading competency using specific language and literacy predictors at young children, from grades 1 and 2. Along the same lines, the second paper by Spanoudis et al. targets at identifying the predictive ability of mental state verbs in the identification of SLR versus RD as well as the linguistic predictors of mental state verbs. The Padeliadu presentation targets at expanding the predictors of reading disability through including several cognitive predictors such as executive functioning and working memory and evaluate how the predictive relations are altered over time. The Sideridis and Antoniou presentation targets at highlighting important aspects of measurement that likely invalidate the observed performance levels of individuals with learning disabilities. Biases of a reading instrument across groups of children with and without learning disabilities along with indices of successful guessing and carelessness were brought to the attention of the assessment specialist. Last, the Papadopoulos et al. presentation targets at presenting a novel computational method for the efficacy of interventions in learning disabilities by use of encoding microgenetic data.

Presentation 1

Early language and Literacy Predictors of Later Learning Difficulties in reading and spelling.

George Manolitsis, Ioannis Grigorakis, & Apostolos Kargiotidis, University of Crete

This is a longitudinal study examining the diagnostic value of early oral language and literacy variables in the identification of poor readers and/or spellers in a consistent orthography. Specifically, we examined retrospectively whether children who face reading and/or spelling difficulties at the end of Grade 5 could be predicted by the assessment of specific language (phonological awareness, morphological awareness and rapid automatized naming) and literacy (reading speed, reading comprehension and spelling) skills at the mid of Grades 1 and 2. Although it is acknowledged how important is the early prevention of learning difficulties (LDs) for an efficient intervention, there is controversy regarding the specific precursors for an accurate identification of children with LDs and for the best time to evaluate these precursors (Bishop & League, 2006). In consistent orthographies phonological awareness seem to have a limited role in
the contribution of typical (e.g., Georgiou, Parrila, & Papadopoulos, 2008; de Jong & van der Leij, 1999) and atypical (Papadopoulos, Georgiou, & Kendeou 2009) early reading development. On the other hand, it seems that morphological skills may foster typical reading comprehension and spelling after Grade 1 (e.g., (Desrochers, Manolitsis, Gaudreau, & Georgiou, 2017; Diamanti et al., 2017) However, there are unresolved issues regarding the role of phonological and morphological skills in conjunction with early literacy skills for the identification of LDs beyond the early stages of reading development. One hundred fifty-five (155) Greek-speaking participants aged 10.5 years old at the end of Grade 5 were assessed on several measures of literacy skills (word and non-word reading fluency, reading comprehension, orthographic awareness, and spelling to dictation). Those Grade 5 participants who performed below the 10th percentile formed the group of children with LDs in each one of the reading and spelling skills. In the mid of Grades 1 and 2 all children were assessed on oral language skills (phonological awareness, morphological awareness, rapid automatized naming – RAN) and literacy skills related with reading and spelling. Also, nonverbal intelligence and vocabulary assessed in Kindergarten in order to serve as control variables. We ran a series of logistic regression analyses in order to examine which one of the Grades 1 and 2 language and literacy variables predicted better the risk for Grade 5 children to face learning difficulties on each one of the literacy variables (reading speed, reading comprehension, orthographic awareness, spelling dictation). We found that RAN skills and word reading speed assessed in both Grades 1 and 2 predicted more consistently than the other language and literacy skills the risk for Grade 5 children to face (a) LDs in reading variables and (b) a mixed profile of literacy difficulties (below the 10th percentile on more than three Grade 5 literacy variables). Interestingly, phonological awareness in Grade 2 identified significantly children who turned out to be poor readers, but morphological awareness skills did not identify accurately the risk for reading or spelling difficulties in Grade 5. The findings provided evidence for the value of early assessment on phonological skills and reading speed to improve our chance to identify as early as we can the children at risk for later literacy difficulties.

Presentation 2

Mental State Verb Understanding by Children with Reading Difficulties in School Age Children

George Spanoudis, Maria-Sofia Peletie University of Cyprus

Specific language impairment (SLI) and reading disability (RD) are comorbid developmental disorders. Research revealed that school-aged children with SLI experience mental state verb-related difficulties. On the other hand, semantic processing studies show that children with RD demonstrate difficulties in integrating a word with the prior text and that word-level knowledge has consequences for word meaning processes in comprehension. Mental state verbs (MSVs) are an important component of syntactic and semantic development. In this study, mental state verb understanding of children with RD was examined in relation to language ability. Two groups of
children each of 30, aged 8 to 12, one with reading difficulties and one typically developing matched on age, nonverbal cognitive level and varying significantly in reading ability were studied on a test battery including general linguistic ability (syntax, vocabulary, sentence recalling, metalinguistic awareness, and mental state term (MST) understanding) measures. The conventional statistical analysis indicated that the two groups differed significantly in all five measures; Linguistic ability seems to play an important role in the prediction of MST understanding. Additional analyses revealed that whereas syntactic ability was the best predictor of MST, suggesting that MST relies primarily on general linguistic skills, but that more specific aspects of language may bootstrap MST. The findings are further discussed in relation to data stemming from the current research. Further work is needed to clarify the generalizability of our findings.
Presentation 3

Cognitive Characteristics of Students with and without Reading Disabilities: Their Changing Role in Reading Development
Padeliadu Susana - Aristotle University of Thessaloniki and Faye Antoniou - National and Kapodistrian University of Athens

During the last 10 years, research interest regarding the cognitive profiles of students with reading disabilities has grown significantly. Furthermore, the predictive role of specific cognitive characteristics in reading skills has also been in the major research agenda. Two major cognitive characteristics that have gained research interest and at the same have produced some inconclusive results, are working memory and executive functioning. Although deficits in working memory are considered as one of the major defining characteristics of reading disabilities (Bacon, Parmentier, & Barr, 2013; Swanson, Kehler, & Jerman, 2010; Swanson, Zheng, & Jerman, 2009), the nature of those deficits remains under debate. In some reports, deficits include both verbal and visual-spatial components of working memory (Bacon, Parmentier & Barr, 2013; Martinussen and Tannock, 2006; Menghini et al., 2011; Poblano et al., 2000; Smith-Spark and Fisk, 2007; Varvara, et al., 2014) while in others, the deficits reported involve only verbal components of working memory (Jeffries and Everatt, 2004; Kirby et al., 2004; Pickering and Gathercole, 2001; Willcutt et al., 2001). In regard to executive functioning, many studies have reported that children with reading disabilities show deficits in a range of executive function measures (Altemeier, Abbott & Berninger, 2008; Moura, Simões & Pereira, 2014; Varvara et al., 2014). Nevertheless, the literature is less than conclusive in reference to the specific components identified as deficient in students with reading disabilities (Brosnan, et al., 2002; Moura, Simões & Pereira, 2015; Lima, Salgado & Ciasca, 2012; Swanson, Zheng & Jerman, 2009). Since inconclusiveness may be the result of factors such as different age levels, different cognitive skills measured under the umbrella of working memory and/or executive functioning, or difficulty of the tasks examined, we sought to provide additional research evidence on the presence and the role of specific cognitive characteristics in typically developing readers and students with reading disabilities. Our study is structured around two goals: a) comparing students with and without diagnosed reading disabilities on working memory and executive functioning component skills and b) exploring the different links between those cognitive indices and reading skills on different developmental levels for both students with reading disabilities and typical readers. In this context, we further sought to investigate the diagnostic accuracy of working memory and executive functioning measures to correctly discriminate typically developing students and students with diagnosed reading disabilities. A total number of 287 students participated in this cross-sectional study, 134 with diagnosed reading disabilities and 153 typical readers. Students attended 2nd grade (87), 4th grade (97) and 6th elementary grade (103).

Data were collected by individually administering a battery tapping different aspects of working memory (verbal, visuo-spatial and central executive) and executive functioning (attention, planning, processing speed, shifting flexibility). Taking into consideration the “task
impurity problem” in measuring executive functioning (Miyake et al., 2000; van der Sluis, de Jong & van der Leij, 2007), we purposefully included different measurement tasks. Furthermore, three measures of reading skills were used to assess pseudoword reading, word reading and reading fluency. Based on the means analyses, the two groups of students appear to present more differences in their cognitive profile as they grow up. Furthermore, the links between specific cognitive characteristics and reading skills are different for the two student groups, with the predictive relationships being stronger for the typical readers compared to those of students with reading disabilities. The discriminant ability of the battery was further tested by the use of Receiver Operating Characteristic Curves (ROC). Results revealed that at all ages, not all but specific memory and executive functioning skills, were significant predictors of group classification with areas under the curve (AUC) being non-chance (p<.05) and ranging between 72-88%. Findings are discussed in relation to the differential role of specific cognitive skills to the identification of students with and without reading disabilities.

Presentation 4

Critical Assessment Issues in the Measurement of Learning Disabilities
Georgios D. Sideridis and Faye Antoniou-National and Kapodistrian University of Athens

The goal of the present study was to evaluate measurement aspects of learning disabilities as they relate to the assessment of ability scores by use of Item Response Theory (IRT). In particular, differences between groups of children with and without learning disabilities were evaluated after conditioning for overall ability levels, examining differential behavior in specific items denoting some form of bias. Subsequent between groups differences were evaluated using parameterizations that allowed for differential functional relationships between groups, the ability or not for successful guessing behavior and the presence of careless responding through fitting 1-4 parameter IRT models. Participants were 972 children from the early elementary school grades. There were 824 typical children and 148 with learning and other low incidence disabilities. Results indicated that evaluation of person ability estimates is confounded severely by the inability of children with learning disabilities to successfully guess on items beyond their level of ability. Differences in careless responses were evident in items at the end of the reading measure and were predicted by parents’ estimates of ADHD. It is concluded that person based assessments in learning disabilities need to be purified for the presence of factors that alter the ability estimates and/or error of measurement. Recommendations for purification are provided.
Presentation 5

Microgenetic analysis of reading remediation: A novel computational framework

Timothy C. Papadopoulos, Christiana Ktisti,
University of Cyprus & Christoforos Christoforou St. John’s University

The efficacy of reading intervention programs is usually determined by comparing participants’ performance to controls on dependent measures at pre-, mid- and post-intervention assessments. However, little is known how learning progresses during different stages of the intervention. In this presentation, we propose a novel computational framework to capture learning process dynamics during intervention through the analysis of microgenetic data. The framework addresses the problem of encoding microgenetic data into a common data representation model, introduces four information-theoretic metrics to capture the instantaneous developmental learning stages of groups and individuals, and provides the mathematical model to analyze those metrics for the study of learning stages during the intervention. In doing so, we utilized data from the GraphoGame program (Lyytinen et al., 2009) in a sample of 56 6-year old children with reading difficulties. Results show that the framework functions as a new tool to explore the modulation in learning stages during the intervention and to better understand how reading takes place and how reading disability may be adequately treated.
Symposium 3

Researching Summer Programs for Students With and At Risk for Reading Disabilities
Reed Deborah, Reeger Adam & Aloe Ariel- University of Iowa
Scanlon David – Boston College

Presentation 1

Keeping Students and Teachers on Track in Summer

Objectives. Syntheses of summer literature recommend that programs offer instruction aligned with school-year curricula, delivered to groups of ≤15 students for ≥80 hours (Kim & Quinn, 2013; McCombs et al., 2011). We investigated the extent to which students in a program with these characteristics outperformed non-participating peers.

Importance. Given the high costs of summer programs (Reed et al., in press), it is important to understand their benefits and limitations for students with/at risk for reading disabilities.

Methods. The 1,316 eligible students were in Grades 1-4 and not reading proficiently (11-17% multilingual, 32-45% low s.e.s., 46-76% special education, 51-64% male, 73-77% White, 16-29% Hispanic). Summer school combined whole-group and small-group reading instruction for 3 hours/day over 28 days. Teachers used the district’s core curriculum, focusing on lessons students had not mastered. Fidelity was monitored weekly. Participating and non-participating students were pre- and posttested with standardized reading tests (see Presentation 2). Analytic methods are described in Presentation 3.

Results. In comparing summer program students to non-participating peers, effect sizes were statistically significant for Grade 1 overall reading performance (g = 0.498) and word reading (g = 0.491), and Grade 4 reading comprehension (g = 0.381). In Grade 3, effects were significant but negative for word recognition (g = -0.346). No other results were significant (Reed et al., in press).

Conclusions. Participating in summer reading programs does not guarantee a benefit for students with/at risk for reading disabilities, nor are students not in school during an extended break guaranteed a loss of learning. Teachers’ treatment fidelity was low (M = 47%), suggesting that teachers did not find it feasible to adapt the 90 minute/day schoolyear curricula to a 3 hour/day summer program (Lee et al., 2009).
Presentation 2

Measuring Changes in Summer Reading Performance

Objectives. Accurately measuring students’ summer program outcomes involves addressing issues with properties of the assessment itself; comparability of scores year to year, the overall score scale, and when the assessments are administered relative to the program.

Importance. Given the variability among reading assessments, it is important to carefully align interventions and outcomes, particularly considering measurement properties (Lockwood, & McCaffrey, 2014).

Methods. All students eligible for the summer program were pre- and posttested with subtests of RAPID (Foorman et al., 2015). See Presentation 1 for participant details.

Results. Positive growth on RAPID could be detected because RAPID is vertically scaled across grade levels. Some measures are scaled to show score decreases between spring and fall, thus misportraying changes in student performance post-summer. Despite vertical scaling, large score variability in the RAPID measures within student groups (relative to variability between groups) still poses challenges to detecting possible intervention effects.

Conclusions. Aspects of assessments such as its score scale and content consistency over time may influence study results. Moreover, the time(s) of year when the assessment is administered may play a major role in determining its appropriateness for measuring changes that can be attributable to summer programs. These measurement issues undermine the validity of the causal inference.

Presentation 3

A Methodological Approach to Study Summer Programs’ Effectiveness

Objectives. Accurately assessing the effectiveness of summer reading programs requires addressing two methodological and analytic challenges. First, the treatment and control groups must be comparable in key observable covariates (Shadish et al., 2002). Second, the treatment groups are typically nested in several clusters, but the control groups are not—referred to as a partially nested/partially clustered design (Lohr et al., 2014). We overcome both these challenges by combining propensity score weighting with partially clustered models.

Importance. Given the number of summer reading programs evaluated without a control group, with a non-comparable control group, and/or without accounting for the partially clustered structure of the data, it is important to illustrate the use of proper methods.
**Methods.** Data were analyzed in two ways: (1) pre-to-posttest growth of treatment group and (2) comparison of treatment to control students by combining propensity score weighting with partially clustered models. This study is based on the participants described in Presentation 1.

**Results.** Results indicated that the summer program appears more effective when evaluated as pre- to-posttest growth for the treatment group than when evaluated to account for the presence of a control group and the proper levels of clustering.

**Conclusions.** Achieving causal inference requires aligning the study design and analyses with the causal question of interest and the data generation process. We demonstrate the importance of including a control group and accounting for clustering when interpreting summer program results.
Symposium 4

Gamification as a means to engage students with learning disabilities in building their academic skills

Participants

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Marko Sperling, Department of Special Education & Rehabilitation, University of Cologne, Germany.

Abstract

Gamification is a technique that implements game elements in educational settings to make learning more fun (Kapp, 2012). The inclusion of playful features, such as immediate feedback, progress indicators, countdowns, or rewards (e.g. points or badges), into otherwise dull learning situations has the potential to greatly facilitate educational success (Arnold, 2014). Such an additional boost is especially vital for students with learning disabilities. These learners experience a relatively great amount of failure and need additional impulsion to carry on with their endeavors to overcome their challenges (Lämsä, Hämäläinen, Aro, Koskimaa, & Äyrämö, 2018).

This symposium aims to highlight the benefits of implementing gamification in special education settings. We focus on different areas of learning and consider various types of game principles. In the first paper, we present the evaluation of a multicomponent motivational system, containing explicit timing, self-scoring through immediate feedback, and visualization of high scores. This study demonstrates how effective those game elements can be for students with learning disabilities in increasing their reading, writing, and math performance. The second part of the symposium is focused on a work in progress. The unfinished experiment tests the benefits of storytelling as an element of gaming by embedding vocabulary learning into a story to enable memorization. The last presentation introduces reading racetracks as an easy-to-implement approach to improve sight word acquisition and reading fluency in students with learning disabilities in a playful way.
Presentation 1

The effects of a game-based motivational intervention on increasing the performance of students with or at risk for a learning disability in the three Rs

Jennifer Karnes, Susanne Hisgen, & Matthias Grünke- Department of Special Education & Rehabilitation, University of Cologne, Germany.

Introduction

Encouraging students with or at risk for developing a learning disability to engage deeply with the “three Rs” (Reading, Writing and Arithmetic) is vital for their lifelong success (Smith, 2013). Thus, there is a great need for easy-to-implement interventions that can effectively increase students’ willingness to delve into reading, writing, and math. Research suggests that techniques featuring game-like characteristics have the potential to lift the drudgery of drills and can inject an element of fun into otherwise tedious training sessions (Lämsä, Hämäläinen, Aro, Koskimaa, & Åyrämö, 2018). Among the most common ones are explicit timing, self-scoring, and visualization of high scores. Explicit timing sets a time limit for exercises with the intention to make the time interval most effective (Van Houten & Thompson, 1976). Its benefits have been repeatedly documented (Dawes, 2018; Duhon, House, Hastings, Poncy, & Solomon, 2015; Grays, Rhymer, & Swartzmiller, 2017; Rhymer et al., 2002). When applying the strategy of immediate feedback through self-scoring, students can monitor their own performance (Light, Mc Keachie, & Lin, 1988). Research has shown that these combined strategies increase students’ motivation (Clark & Rhymer, 2003; Haydon & Kroeger, 2015; Martin-Chang, 2016; Lawley, 2016; Rhymer et al., 2002; Wells, Sheehey, & Sheehey 2017).

Even though the three techniques described above can certainly be considered promising, research supporting their effectiveness is quite dated (see, e.g., Van Houten & McKillop, 1977; Van Houten, Hill, & Parsons, 1976; Van Houten, Morrison, Jarvis, & McDonald, 1974). Thus, the purpose of this paper is to present three practical single-case studies, each focusing on one of the three Rs. In each case, we applied a multicomponent motivational system (MMS) consisting of explicit timing, self-scoring, and visualization of high scores.

Methods

All three single-case studies were conducted in Germany and involved students with or at risk for developing a learning disability. In every case, participants’ selection was based on the results of standardized tests, as well as capturing their skill level in reading, writing, or math. In the first study, we evaluated the effects of our MMS on the reading fluency of four third graders by applying an ABAB design. The research spread over 20 school days with each phase lasting 5 days. During every phase, the students had to read stories of 120 words. The second single-case analysis focused on enhancing the length and quality of stories written by four children from fourth grade. We utilized an ABA design with 13 daily measurements. The number of total words written and the results of a qualitative writing rubric served as independent variables. The last study was geared toward examining the benefits of our MMS on the math performance of three third graders. We again applied an ABA plan, this time with
15 daily probes. The beginning of the intervention was determined randomly for each participant to increase internal validity (Dugard, File, & Todman, 2012).

**Results & Discussion**

The results for the reading study indicated that the MMS was very helpful in increasing the participants’ decoding rates. Each of the four students demonstrated better mean results in the B phases than in the A phases. In the writing study, the participants started to produce more extensive and qualitatively better stories as soon as the MMS was implemented. However, this effect ended abruptly once the intervention was terminated. The treatment also worked when applying it to increase math performance. All three students showed considerable improvements in the number of arithmetic problems they could solve.

In all cases, effect sizes suggested that the MMS had a high positive impact on students’ achievement. The percentages of non-overlapping data comparing the performance during the different phases reached the highest value of 100% most of the time. The overall piecewise regression analyses yielded significant level effects when contrasting the A phase with the B phase.

Despite these positive effects, a number of limitations in this research should be acknowledged to place the findings in context. First, the number of our participants was very limited. Involving more students would have strengthened the results and made them more generalizable. Second, the phases were rather brief. It is possible that the MMS would have lost its potency if it had been implemented for a longer period of time. Third, the MMS was evaluated as a whole, which means there is no way to determine the isolated benefits of any of the three treatment elements.

Regardless of their limitations, our studies present additional empirical support for the use of explicit timing, self-scoring, and display of high scores for overcoming the resistance to engage in reading, writing, or math. Finding ways to encourage students with or at risk for developing a learning disability to complete a task that they usually detest is a great challenge for educators. However, our experiments offer reason for optimism, as their results indicate that it does not require much effort to provide students with motivators to engage in the three Rs. Further research is needed to shed more light on the effectiveness of the motivational system and the possible mutual influences between the features.
The effects of a storytelling intervention on the ability of struggling seventh graders from Germany to recall English vocabulary words

Anne Barwasser, & Turid Knaak- Department of Special Education & Rehabilitation, University of Cologne, Germany.

Introduction

In a globalized world, the ability to speak English becomes ever more important. Students need to learn English to successfully graduate from school, and even most workplaces expect at least some English language skills. According to the English Proficiency Index, which tests and compares the ability to speak English across more than 88 countries, Germany is just average in Europe (EF Education First, 2018). Thus, there is an urgent necessity to improve students’ English language proficiency level. In particular, fostering foreign language skills in students with learning disabilities has oftentimes been neglected in the past for the reason that people mistakenly assume that learning English would affect the writing and reading skills of their mother tongue. This assumption has been refused by several studies. Furthermore, it has been shown that mastering vocabulary in a foreign language enhances the abilities and comprehension of students in writing, reading, mathematics, and other subjects (Saville-Troike, 1984).

To keep learners (including those with learning disabilities) motivated and to help them increase their performance and self-confidence, English teaching should be primarily focused on the two skills listening comprehension and speaking, whereas particular attention to writing and reading should be attended to at a later stage. Communicative methods that promote oral language production and active learning in order to make language learners capable of producing language themselves seem to be beneficial (Bailey, 2005; Millis & Rhem, 2010).

One method that combines the promotion of oral language use and active engagement to impart vocabulary knowledge to students is the so-called “storytelling method.” By telling a story in a very interactive way, using vocalisation, mental imagery, and communication with the audience, the teller and the learner communicate in an ongoing cycle (Hamilton & Weiss, 2005; Roney, 1996).

Storytelling also uses elements of gamification by embedding sight word learning into a story. A story connects learning to the real life of students, and, thus, vocabulary acquisition is incorporated into a context and becomes meaningful. By involving a learner in a story, learning can become more powerful and memorable (Kapp, 2012). Many researchers believe that students can benefit from listening to storytelling (Alna, 1999; Ellis, 1997; Isbell, Sobol, Lindauer, & Lawrence, 2004; Meyer, 1995).

The purpose of this study is to increase the vocabulary knowledge of German students with or at risk for a learning disability by using the storytelling method in combination with flashcards, target word explanation, and self-graphing. Thirty chosen vocabulary words are taught over a period of 4 weeks.
Method

Participants and Setting

The participants were 24 seventh graders from an urban public school in Northrhine-Westfalia. Three female graduate students of special needs education served as interventionists. The children were chosen due to their level of vocabulary mastery and their current English sight words. A self-made vocabulary test, consisting of 40 words and the same amount of one-, two-, and three-syllable words in English, was conducted to select the participants. Afterwards, the chosen children were randomly allocated to six different groups, each containing four children.

Design and Measures

We applied a single-case multiple baseline design across subjects to examine treatment effects before and after intervention (Kazdin, 2010). The start of the A phase for each group of participants was chosen randomly to increase the internal validity (Dugard et al., 2012). The first two groups received at least 10 treatments sessions, the third and fourth group at least 11, and the last two groups at least 12. After each lesson, the participants had to fill out a vocabulary test including 15 words that were randomly pulled out of a pool of all 30 words that were trained.

Procedures

The storytelling treatment consisted of 15 minutes of storytelling and target word explanations with the help of flashcards and pictures. For each session, a different story was designed containing ten words of the vocabularies to be trained. Each word had to appear at least three times over the treatment period. We presented the same stories and the same vocabulary words to all groups. We wrote the stories ourselves with the target words marked with another colour. Furthermore, they were visible to the children at any time. When a marked word appeared while telling the story, the interventionist stopped and directed the children’s attention to the word itself by showing a flashcard consisting of the word and a matching picture.

Results & Discussion

The study was still ongoing at the time this abstract had to be submitted. However, a first inspection of the available data suggested that the intervention was very effective in enhancing the students’ performance in the vocabulary test.
Presentation 3

The Effects of a Reading Racetrack Intervention with a Self-Graphing Procedure on the Reading Fluency of Struggling Elementary School Students with German as Second Language

Marko Sperling, & Anne Barwasser- Department of Special Education & Rehabilitation, University of Cologne, Germany

Introduction

Reading is certainly one of the most important skills a child must acquire during the early years of schooling. It provides the groundwork for a productive life. Research indicates that students who read well have a high probability of achieving success in school and later on in the workforce (Aaron, Joshi, & Quatroche, 2008). The ultimate goal of reading is to construct meaning from written content. According to the theory of automatic word processing (LaBerge & Samuels, 1974; Logan, 1988), word recognition automaticity is indispensable for reading fluency, which in turn is a key foundation for text comprehension (Miller & Schwanenflugel, 2006; Paige, 2011). The National Assessment of Educational Progress indicates that only 35% of fourth-grade students and 11% of students with learning disabilities are performing at a proficient level in reading (National Center for Education Statistics, 2013).

It is vital to provide struggling readers with effective interventions that help them improve their reading skills. However, when trying to compel students to actively participate in treatments that are easily perceived as monotonous and dull, motivating them to learn presents a great challenge. One promising way to successfully overcome this hurdle is to implement reading racetracks (these are board games intended to improve sight word fluency).

Several studies have already shown that reading racetracks can be very beneficial in boosting sight word acquisition in children. However, all of them have been undertaken by one particular research team in the U.S. The purpose of this experiment was therefore to evaluate the effects of a reading racetrack game on the word recognition automaticity of three elementary students with learning disabilities in a German elementary school, which is a different environment from the one in which previous experiments have been conducted.

Method

Three elementary school students (8 and 9 years of age) participated in this investigation: Aiana (female), Breda (female), and Cosmin (male) (names changed for anonymity). They all attended an inclusive elementary school in a major city in Germany and scored in the bottom 5% of a standardized reading assessment instrument. A multiple baseline design across subjects was used with a different intervention starting point for each child. During baseline conditions, the three children engaged in different math activities. The experiment stretched over a period of 12 days.

Thirty cards with common two-syllable German words were used for the training. They were placed upside down on the thirty fields of the board game. The participants were asked to roll a die, move the appropriate spaces on the track, turn the card around, and read the respective
word out loud. When an error occurred, feedback was provided. The racetrack game was played for a total of 15 minutes during each day of the B phase. In addition, the children could monitor their progress by seeing their data in a line chart. After playing the game, data were collected by counting the number of words read correctly in 1 minute by the participants while showing them the trained words on flashcards in random order.

**Results & Discussion**

All participants demonstrated very stable baselines. At the onset of the intervention, every student improved slowly but continuously over time. In all cases, the dimension of the effect sizes was impressive. Every participant reached the maximum value of 100 in the percentage of non-overlapping data, of all non-overlapping data, of data exceeding the median, and of data exceeding the median trend.

Weighted Tau-U scores (A vs. B + trend B – trend A) were calculated to supplement visual analysis using an online tool by Vannest, Parker, and Gonen (2011). This index accounts for the non-overlap of data points between intervention phases, for data trends within the intervention phase, and for data trends within the baseline phase (Parker, Vannest, Davis, & Sauber, 2011). Values can vary from -1 to 1. A positive score indicates an improvement in performance. The average Tau-U value for all five participants was 0.73 (p < .001). According to Vannest and Ninci (2015), scores from .60 to 0.80 represent a large effect. Thus, we can conclude that our group of three children benefitted from the intervention in a notable way.

Looking at the five participants individually, it can be stated that Aiana achieved a weighted Tau-U index of 0.68 (z = 3.11; p = < .01), Breda achieved one of 0.74 (z = 3.27; p < .001), and Cosmin achieved one of 0.68 (z = 2.94; p < .01). Thus, all students achieved statistically significant improvements.

The data collected during our experiment indicate that playing the racetrack game was very beneficial in building sight word fluency in our participants. Before the intervention, the children were able to only read a small number of simple words per minute. However, as soon as the treatment was carried out, performance gradually increased. The mean enhancements all reached non-overlap effect sizes of 100%; the overall Tau-U index attained a respectable magnitude of 0.73 and hit the statistical significance benchmark.

However, our research employed only three participants from a particular age bracket. Therefore, generalization is limited. Another shortcoming pertains to the lack of follow-up data. We have no way of knowing how stable the treatment effects were over time. In addition, we neglected to collect data on treatment fidelity and social validity. Future studies should acquire information on long-term effects, the practicality of the procedures and findings, and the extent to which the intervention is delivered as intended.
Symposium 5

An International Perspective on Reading and Language Difficulties in Bi- and Multilingual Learners

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Summary

This symposium comprises 3 studies conducted in 3 countries (Israel, the Phillipines, and Canada) that vary in terms of broad factors such as geography, demographic context, and the nature of their linguistic diversity. They also vary in terms of the linguistic and orthographic typologies and the socio-political contexts in which individuals acquire their L2 or L3 language and literacy skills. Nevertheless, a common denominator across the three studies is the focus on what is common and what is different in the reading, language, and cognitive profiles of students who experience learning difficulties in their L1 and/or L2. Considered jointly the studies provide new theoretical insights about concepts such as L1-L2 transfer, the different learning profiles that emerge, and the nature of cognitive processes that underlie these profiles. These studies are interesting theoretically and have implications for better informed and less-biased assessments of LD in bi- and multilingual contexts.

Presentation 1

The relationship between L1 and English as a foreign language skills among weak and strong pupils.

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Objectives

The transfer of native language literacy skills (L1) skills across languages has been explored within various theoretical models. The central processing hypothesis suggests that the same set of cognitive-linguistic predictors underlies the development of reading skills in L1 and L2, even when different alphabetic writing systems are involved (Geva, 2000). It also predicts that these abilities are interdependent and transferable across languages (Cummins, 1991). Similarly, the linguistic coding differences hypothesis (LCDH) claims that difficulties in acquiring a foreign language can be attributed to difficulties in native language learning (Sparks & Ganschow, 1993; Sparks, 1995). Thus, pupils with strong L1 skills will have similarly strong skills in additional language, whereas pupils with weak L1 skills will experience similar difficulties in acquiring additional languages.

Israel is a multilingual country. Hebrew and Arabic are the main languages of instruction. English is the first mandatory foreign language. Literacy instruction officially begins in third grade for all pupils, including struggling learners. In order to receive a matriculation certificate and get accepted to university, pupils must reach a required level of English proficiency. As learning disabilities often remain undiagnosed in certain areas of Israel due to issues relating to funding and social mores, it is important to find alternative ways of uncovering language-learning difficulties. The present study explored the transfer of literacy and literacy related skills.
from Hebrew and Arabic (L1) to similar English as a foreign language (EFL) skills as a source of information regarding potential language learning difficulties.

**Methods**

The participant pool was comprised of 168 Arabic speaking pupils and 190 Hebrew speaking 4th grade pupils between the ages of nine and ten. All participants began studying English in third grade. The Arabic speakers came from four different schools. The Hebrew speakers came from six different schools. All of the schools were in the center of Israel.

Four literacy and literacy related tasks were administered in the L1 of the participants and in English: real word spelling and reading, phoneme deletion, orthographic choice. Parallel tasks were used in each language. L1 language tasks in Arabic and Hebrew were assessed using standardized L1 tools (Arabic - Asadi, Shany, Ben-Simon, & Ibrahim, 2015; Hebrew – Shany, Lachman, Shalem, Bahat & Zeiger, 2006). Parallel English tasks were developed for the present study.

**Results**

Generally speaking, the correlation coefficients between L1 and similar English tasks (spelling, reading, phoneme deletion and orthographic choice) were within the medium range, in terms of effect size, (Field 2009). Careful observation of the scatter-plots revealed a general trend where pupils who scored poorly on L1 measures also scored poorly on EFL measures, however pupils who showed strong performance in L1, did not necessarily show similarly high scores in EFL. Among the strong L1 pupils a great range of variance was observed in EFL scores ranging between high and relatively low scores across tasks.

**Conclusions**

While findings of the present study generally support the possibility of a set of underlying skills that can be transferred across languages despite orthographic differences, as suggested by the central processing hypothesis, they do not fully support the claims of the LCDH. Pupils with weak L1 skills performed poorly in English, however, pupils with strong L1 skills did not necessarily have equally strong skills in English. This would indicate that pupils with weak L1 skills might have a weak underlying cognitive and linguistic skills, which cannot adequately support the acquisition of additional languages. The discrepancy among strong L1 learners could indicate that despite a stronger cognitive and linguistic foundation, some strong L1 learners may still struggle with the early acquisition of additional languages, or that these pupils might be able to recruit their abilities to support L1 literacy skills at early stages, but still be at risk for learning difficulties later on. Comparing L1 and L2 skills among struggling learners may be a viable alternative in cases where pupils exhibit poor performance in their L1, and there are no opportunities to perform diagnostic testing in order to assess the existence of a learning disability. If pupils exhibit similar profiles of difficulties in both languages, that could be an indication of an underlying disability, although if weaknesses are only evident in the additional language, the pupil might need additional follow up observations.
**Objectives and Importance**

Research on language and literacy learning includes differentiating whether a bilingual child has a reading disability or has challenges specific to learning a second or additional language. Although researchers are beginning to understand these differences in bilingual learners (Geva, 2006; August & Shanahan, 2006), worldwide approximately 16% of individuals are multilingual learners. Linguists have acknowledged the unique aspects of multilingualism versus bilingualism (Cenoz, 2003). However, very little research exists examining profiles and predictors of reading disabilities in multilingual learners (Smythe & Everatt, 2000, 2012). The current study examines multilingual poor readers in the Philippines.

The Philippines provides an interesting context for studying language learning (Estrera & Uno, 2017). It has two official languages, Filipino and English, which are taught in all schools. Both languages use the Roman alphabet with slight variations in terms of the letters used. However, Filipino is written using a shallow/transparent orthography, while English is written using a deep/opaque orthography with irregular letter-sound relations (Ocampo, 2004). In addition to these two official languages, many people in the Philippines speak one or two more additional languages, including languages spoken at home and/or in their local communities (Dekker, 2017). One of these languages is Kapampangan, which is spoken by more than two million users (Simons & Fennig, 2018). Kapampangan uses the Roman alphabet, and has a shallow/transparent orthography (Samson, del Corro, & Dizon Henson, 2016).

**Method**

The participants were 326 students in the Philippines in grades 4, 5 and 6 with equal numbers in each grade. The participants were speakers of Kapampangan (L1), Filipino (L2) and English (L3). The participants completed measures of word and pseudoword reading, phonological awareness and vocabulary knowledge in each language. English RAN digits and nonverbal reasoning were also administered. A combined reading score was calculated using word plus pseudoword reading, which was converted to a standardized residual score controlling for age and grade to include participants across age groups. These standardized scores reflected performance relative to peers in the same schools and not relative to norms for monolingual English speakers (Geva & Herbert, 2013). Then sub-groups were created across grades: 21 participants were classified as “multivariate poor readers” (MVPR), with scores greater than 2 standard deviations (SD) below the mean on word level reading across their 3 languages; 17 participants had low scores in only one language (poor in one language) and average scores in their other two languages, and 28 had average scores (average readers) (< 0.3 SD above/below the mean in all three languages).
Results

Preliminary analyses focused on group comparisons to determine whether the MVPR were more similar to the group that was poor in one language and whether the group that was poor in one language differed in turn from the average group. All ANOVA comparisons including the three groups were significant. Post-hoc comparisons showed that the average group differed from the other two groups on nonverbal reasoning. The MVPR differed from the other two groups on RAN digits, with slower naming speed, while the other two groups did not differ from each other. The MVPR differed from the other two groups on phonological awareness in Filipino and English. The other groups, poor in one language and average readers, did not differ on these measures. In terms of phonological awareness in Kapampangan, the MPR group had lower scores than the average reader group. The children who were poor in one language did not differ from either group on this measure. For the vocabulary measures, the MVPR had lower scores than the other two groups in terms of English vocabulary. The MVPR group also had lower vocabulary scores than the average readers on Kapampangan and Filipino, but the children who were poor in one language did not differ from either group on these vocabulary measures. Additional tests of group membership will be examined.

Discussion

The MVPR group showed multiple language and literacy deficits across their 3 languages, showing that their difficulties were indicative of a reading/learning disability. They differed from the average readers on all measures. On the other hand, the group of children who were poor readers in one language had a mixed pattern of strengths and weaknesses. In some cases, they resembled the MVPRs, while in other cases their performance was more similar to the average group. This pattern of findings suggests that weaknesses in the group that was poor in one language might reflect challenges in learning an additional language or restricted exposure to that language rather than general reading difficulties. These results have implications for assessment and intervention of multilingual learners.
Presentation 3

Late-emerging Developmental Language Disorder in English-Speaking Monolinguals and English Language Learners

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Importance and Objectives

Research involving monolinguals has demonstrated that Developmental Language Disorder (DLD) (a.k.a. LI) can be noticed in the early years, (a) is associated with language components such as phonology, morphology, syntax, semantics, and pragmatics across different modalities” (ASHA, 2017; Bishop, Snowling, Thompson, Greenhalgh, & the CATALISE consortium, 2017), (b) tends to persist into adolescence, and (c) is related to academic achievement but also interpersonal relations, friendship making, and socio-emotional problems (Beitchman et al, 1999; Conti-Ramsden & Botting, 2008).

Recently, research has begun to address the challenges of identifying and treating late-emerging DLD in monolinguals (e.g., Snowling, Duff, Nash, & Hulme, 2016; Zambrana, Pons, Eadie, & Ystrom, 2014). To the best of our knowledge, the latter has not been addressed to date in the context of L2 learners – hence the present study. This longitudinal study examined (a) the incidence of late-emerging DLD in Grades 4-6 in EL1 and ELL, and (b) Early (Grades 1 and 3) “soft” warning signs of looming late-emerging DLD involving cognitive (working memory, phonological short-term memory) phonological processing (naming speed, phonological awareness), and language (vocabulary, syntax) skills. We hypothesized that some monolingual and L2 children go “under the radar” in lower grades but their language difficulties become more pronounced in later years, hence “late-emerging DLD”.

Method

The study was conducted in a large Canadian city, where classrooms reflect immigration trends, and include children from a vast array of home language backgrounds. The design was multi-cohort cross-sequential. The sample included 149 monolinguals and 402 ELLs coming from diverse home language backgrounds, in 35 classrooms across 14 schools across. Children were assessed annually from grades 1 to 6.

Cognitive measures included: Non-verbal ability. The Matrix Analogies Test (MAT; Naglieri, 1989); Working Memory - The Digit Span Backwards, WISC III; Wechsler, 1991); Phonological Short-term Memory (Farnia & Geva, 2011); Naming Speed (Denckla and Rudel, 1976); Phonological Awareness (Rosner and Simon (1971).

Language measures included: receptive vocabulary (PPVT, Dunn & Dunn,1981); Receptive Syntax (Johnson & Newport, 1989); Expressive Syntax (CELF-3; Semel, Wiig, & Secord,
1995), and Syntactic Complexity derived from the Test of Writing Ability, (TOWL III-Hammill & Larsen, 1996, Form A).

We first examined the incidence of late-emerging DLD among EL1s and ELLs. Next, we compared the cognitive, phonological processing, and language profiles of late-emerging DLD with those of a matched group of typically-developing children in order to examine the possibility that there may be “soft” warning signs of looming language and cognitive difficulties in this group that go “under the radar” in lower grades.

Results

The designation of late-emerging DLD was based on two syntactic measures: expressive syntax and the (written) syntactic complexity scores. Children in grades 4-6 whose expressive syntax scores and/or syntactic complexity scores were at least one SD below the mean on two assessment waves were designated as late-emerging DLD. Children with dyslexia were excluded.

Results indicated that (a) regardless of language status, children with late-emerging DLD do not have difficulties with vocabulary in the early school years but demonstrate difficulties in processing rule-based grammatical structures later on, and (b) late-emerging DLD can be identified as early as Grade 1 on the basis of working memory and naming speed. Research and assessment implications are discussed.

Discussion

The key finding is that similar to EL1s, it is possible to identify a small group of ELL children whose language difficulties become more salient around grade 4. Regardless of language status, children with late-emerging DLD do not appear to have difficulties with vocabulary knowledge in the early school years. This finding is in line with the Procedural Deficit Hypothesis (Ullman & Pierpoint, 2005). This hypothesis stipulates that while the declarative knowledge of vocabulary of children with late-emerging DLD remains intact throughout, they demonstrate difficulties in processing rule-based grammatical structures (Lum, Conti-Ramsden, Page, Ullman, 2012; Nation, 2016).

While both ELL and EL1 children who end up with a designation of late-emerging DLD perform in the average range on an array of cognitive, phonological, and language measures, they perform relatively more poorly than their matched, typically developing peers on these tasks. It appears that already in the primary grades it is possible to distinguish late-emerging DLD from typically developing children, regardless of EL1/ELL status on the basis of rapid naming and working memory.

Implications

Instructional interventions targeting late-emerging DLD need to be developed and researched, and relevant training of gatekeepers (teachers, speech and language pathologists and school psychologist) evaluated. Potentail research and assessment implications are discussed.
Symposium 6

Early LD identification and remediation
Antoniou, F. & Ralli, A.- National and Kapodistrian University of Athens

In early elementary years the distinction between Developmental Language Disorder and Dyslexia or Learning Difficulties in reading and writing (LD) is challenging, due to common attributes related to oral language skills, reading and writing. The aim of the symposium is to shed light on the characteristics of both groups and to provide directions on the way these difficulties can be overcome through the first elementary years. In the first presentation, Aliki Chalikia describes the language and cognitive profiles of 1st grade children with Developmental Language Disorder and children at high risk for Dyslexia. In the second presentation, A. Papakostas and his colleagues present a reading and writing remedial program that aims at enhancing at risk students for LD skills. The aim of the last two presentations is to highlight the skills that need to be taught to third grade students at risk for LD in order to enhance their spelling competence (Fragouli et al.) and reading comprehension in English as a Foreign Language (EFL, A. Papakostas et al.).

Presentation 1

Language and cognitive profile of children with Developmental Language Disorder and children at risk for Dyslexia: Is there a relationship between them?
Chalikia, A., Ralli, A. M., Antoniou, F. National and Kapodistrian University of Athens

Developmental Language Disorder (DLD) and Dyslexia are two neurodevelopmental disorders with significant implications both for school performance and social interaction (Bishop & Snowling, 2004). DLD involves mainly difficulties with oral language (vocabulary, syntax, grammar, discourse) (Leonard, 1998; Conti-Ramsden, Botting, Faragher, 2001)), while Dyslexia is characterized by severe reading and spelling difficulties (Snowling, Lervåg, Nash & Hulme, 2019). Both present significant overlapping. Very often children with a history of Developmental Language Disorder have difficulties in reading, while children with dyslexia often show difficulties related to oral language skills (Catts, Adlof, Hogan, & Weismer, 2005). Three theoretical models have been proposed to characterize the relationship between these disorders: a) the severity model, which demonstrates the phonological deficit as a common causative factor (Kamhi&Catts,1986;Tallal, Allard, Miller&Curtiss, 1997), b) the additional deficit model, which attributes DLD not only to the phonological deficit but also to other cognitive deficits (Bishop & Snowling, 2004) and c) the co-morbidity model, according to which the two disorders have a distinct etiology but often co-exist in the same individual (Catts, Adlof, Hogan,& Weismer, 2005). The purpose of the present study was to describe the language and cognitive profile of children with Developmental Language Disorder and children at high risk for Dyslexia at an early developmental stage, so as to investigate the nature of relationship between those two disorders, in terms of their underlying deficits, so as to get some preliminary evidence on the basic question if Dyslexia and Developmental Language Disorder are separate disorders or manifestations of the same deficit, or, even, if they share a common phonological
deficit. For this purpose, 45 children aged 6-7 years, which belonged to three groups were assessed: 15 children met the criteria for DLD diagnosis, the other group of 15 children were at risk for Dyslexia and 15 children were typically developing.

All the participants were assessed on an array of cognitive, and language (oral and written) tests and had non-verbal intelligence IQ> 85 (Raven's Colored Progressive Matrices). Children with DLD met the criterion of low performance in a standardized language test (<1.5 standard deviation below the mean) while the children at risk for Dyslexia met the criterion for low performance (<1.5 standard deviation below the mean) in a reading test. Children should not have been diagnosed with another disorder (e.g. autism, ADHD), not have been reported by their parents, teachers or specialists to face any sort of environmental problems or be bilingual.

The results revealed deficits between the two clinical groups in almost all the language tasks (phonological awareness, oral comprehension, lexical knowledge, morphological awareness, pragmatic skills) in comparison to the typically developing children. The differences were statistically significant not only between the two clinical groups and the typically developing children, but also between the two clinical groups themselves, except for the phonological awareness tasks, in which no significant differences were found.

Respectively, both clinical groups had statistically significant lower performance in most of the cognitive tasks (working memory, rapid naming and phonological short-term memory) compared to the control group. However, there was not a statistically significant difference for none of these tasks between the two clinical groups, although the DLD group underperformed compared to the at risk for dyslexia group. Overall, the numerical data show a staircase pattern with the typically developing children exhibiting the best performance, being followed by the at risk for Dyslexia group and the DLD group across all language and cognitive tasks.

Regarding their reading skills, the at risk group for dyslexia had the worst performance in comparison to the DLD group and the control group. Although significant differences were found between the at risk and control group, there were no significant differences between the at risk and the DLD group.

Interesting and partly divergent significant correlations were also found between the different skills in the groups. For the children at risk for Dyslexia, phonological awareness (especially phoneme awareness) was correlated with reading skills (word and pseudo-word reading tasks). Also, phonological awareness and working memory were correlated with morphological awareness, while rapid naming was correlated with oral comprehension (listening comprehension task).

On the other hand, for the DLD group, there was a very modest but statistically significant correlation between phonological awareness (phoneme level task) and reading skills (for pseudo-word reading task), as well as between rapid naming and reading skills (word and pseudo-word reading tasks). Also, phonological awareness was statistically significantly correlated with most of the tasks assessing lexical knowledge (receptive vocabulary and definitions), oral comprehension (listening comprehension task) and morphological awareness (receptive and expressive level). In addition, rapid naming was statistically significantly correlated with oral comprehension (answering questions task), morphological awareness
(receptive and expressive level). Last, phonological short-term and working memory were statistically significantly correlated with most of the tasks assessing lexical knowledge (definitions and receptive vocabulary tasks), oral comprehension (answering questions and listening comprehension tasks) and morphological awareness (both receptive and expressive level).

These results provide some preliminary evidence that probably in a transparent language such as Greek, dyslexia and DLD are characterized by shared phonological deficits with the latter presenting more complex cognitive correlations with the aspects of oral language leading to an initial conclusion that maybe the additional deficit model could explain better the relationship between the two neurodevelopmental disorders.
Presentation 2

Can second graders at risk for LD improve their reading and spelling competencies through an interventional program?

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Mouzaki, A.- University of Crete

Objectives & Research

Children who fall significantly behind their peers in first grade reading will more than likely still be the lowest reader in the following elementary grades (Clay, 1991; Torgesen, 2002). Children at risk for Learning Disabilities (LD) can improve their reading skills up to the average age performance, if difficulties are addressed at the beginning stage of reading development (Vellutino, Scanlon, & Tanzman, 1998). The objectives of the research were the design, implementation and evaluation of a reading and writing curriculum for the early intervention for at-risk for LD 2nd graders.

Importance of the Study

Children who become adults with low levels of literacy are at an increasing disadvantage in a society that is creating ever higher demands for effective reading skills in the workplace (Torgesen, 2000). In 2007, students with Dyslexia and LD in Nurseries and Elementary schools accounted for 29.3% (N=2,449) of the student population with disabilities in Greece (Anastasiou & Polychronopoulou, 2009).

Methods

78 second graders from 32 primary schools in Attica were randomly allocated in the three research groups. According to the experimental design, 29 students participated in the experimental group and were taught the “Space Travelers” program, 24 students participated in the comparison groups and were taught all program components except for the morphology component, and 25 students were included in the control group. All students had to meet the discrepancy criterion (Kavale, 2001): at least normal intelligence and yet significant difficulty in word and/or pseudoword decoding, as screened by the administration of standardized tests. The program was implemented by the regular resource room teachers for 20 hours over the period of 5 weeks, while the teacher in the control group implemented „business-as-usual” instruction for equal amount of time. Students in the experimental and comparison groups were taught through Direct and Explicit Instruction (Carnine, Silbert, Kameenui, & Tarver, 1997) cognitive and metacognitive phonological awareness, phonics, vocabulary, narrative skills, and spelling strategies, while the experimental group were additionally taught morphological awareness strategies in order to evaluate the separate effects of that skill to literacy skills. Before, after, and six weeks after the intervention implementation students from all groups were assess through standardized tests about all aforementioned language skills, but also about literacy skills.
Results

There was a statistically significant difference between both groups that taught the curriculum and the control group as determined by ANCOVA in (a) word and pseudoword decoding \[F(2,74)=19.4, \ p=.000\], (b) reading comprehension \[F(2,74)=4.26, \ p=.018\], (c) word definition \[F(2,74)=4.19, \ p=.019\], (d) morphological awareness \[F(2,74)=4.01, \ p=.022\], and (e) phonological awareness \[F(2,74)=4.16, \ p=.019\]. (f) The experimental group was found to be significantly better that the control at narrative skills \[F(1,53)=1.91, \ p=.028\]. Follow-up tests revealed that (g) the experimental group was significantly better at spelling skills compared to the control group \[F(1,53)=2.80, \ p=.034\], even though posttests had revealed that originally (h) only the comparison group was found to be significantly better at spelling after the intervention \[F(1,48)=2.06, \ p=.031\].

Conclusions

Early intervention for at-risk for LD students is possible and early morphological awareness instruction has long-term effects for spelling skills development. Integrated early intervention curricula (Slavin, Lake, Chambers, Cheung, & Davis, 2009) targeting the key language and literacy skills can ameliorate early difficulties and prevent future diagnoses.
Enhancing third graders’ at risk for LD spelling skills
Fragkouli, K., Antoniou, F., Ralli, A.- National and Kapodistrian University of Athens
Mouzaki, A. - University of Crete

Objectives of research

Many students with learning disabilities (LD) are struggling with spelling as a deep knowledge of the phonological structure of language, in which students with LD are lacking of, is prerequisite in order to map the sounds to print (Bos & Vaughn, 2006). Therefore, many intervention programs have been implemented in order to examine if these difficulties can be rectified using different intervention strategies. It has been shown that early intervention, can be an element of fundamental importance in order to help students overcome their difficulties (Bear & Templeton, 1998· Wanzek et al., 2006).

Importance of the study

Even though intervention programs in spelling turn out to be very effective and Greek students face great difficulty in spelling, it is observed a lack of related works in Greek language. There is evidence that one in four students cannot learn to handle written language adequately (Markovitis & Tzouriadou, 1991).

The scope of the study is the investigation of the effectiveness of the proposed intervention program which is aimed at the elimination of phonological, grammatical and historical spelling errors. The lessons for each unit follow a predictable pattern that include five different types of activities: (i) Word-sorting activities (Bear, Invernizzi, Templeton, & Johnston, 2000; Graham, Harris, & Loynachan, 1996) (ii) Building words (iii) Word Hunt (iv) Phoneme-graphemes correspondence (v) Say-cover-write-check strategy (Harris, 1986).

Method

The participants of the study were 60 third graders, who attended their schools” resource rooms, with intelligence quotient over 85 (Raven, 1958), and decoding and spelling skills under the 10th percentile. Students were randomly divided into two groups, i.e. the experimental (N=30) and the comparison group (N=30). The intervention program was applied to the experimental group by the teachers for 20 hours according to the principles of direct instruction with decreasing learning support, whereas the comparison group received the traditional teaching of spelling skills. After the completion of the intervention, post tests as well as follow up tests procedures followed- the latter took place 6 weeks after the end of the intervention in order to examine whether the effects of the spelling instruction were maintained over time.
Results

For the 2X3 within-between factorial design, an Analysis of Variance (Anova) with fixed effects is deployed. Power for the Anova model of 80% is associated with the total sample of 60 participants considering the following specifications: level of significance \( \alpha=5\% \) for a two-tailed test, and a small-to-medium effect size of 0.35 as per Cohen (1992). As expected, there was a statistically significant difference between the mean performance of students in the two groups, favoring the spelling treatment.

Conclusions

Occasionally, spelling instruction is underestimated by promoting informal and incidental methods for learning to spell while placing much less emphasis on explicit and systematic instruction. However, the results obtained from the implementation of the proposed program, which is based on an explicit and systematic approach of spelling instruction, not only highlight the importance of spelling but also prove its increased effectiveness compared to traditional teaching.
Objectives of research

Dyslexic children’s reading behavior is more severe in English because it is an opaque language with a lot of orthographic inconsistencies (Landerl, 2001). EFL teachers’ efficacy is challenged when it comes to teaching children with learning disabilities or dyslexia as they lack relevant knowledge and training (Lemperou, Chostelidou & Griva, 2011; Rontou, 2012). The aim of this study was the design, implementation, and evaluation of effectiveness of an instructional curriculum for beginner students with or without Learning Disabilities (LD) or other Special Educational Needs (SEN) of English as a Foreign Language (EFL) in public primary schools.

Importance of the study

Dyslexia, a specific language-based disorder characterized by difficulties in word decoding in individuals with normal intelligence and sensory abilities (Lyon, 1995), influences and modifies the learning process for students (Nicolson & Fawcett, 2007). Therefore, teachers bear the responsibility of accommodating students with dyslexia in the classroom and facilitate the lesson for them. However, most EFL teachers are not able to accommodate their students’ specific needs as (a) they are not familiar with the nature of Special Educational Needs, (b) are not aware of the affective and cognitive strategies that EFL students with learning disabilities employ, and (c) are not qualified to use the relevant language teaching tools, including the techniques, activities, and materials for their educational support (Kormos, 2013; Nicolaidis & Mattheoudakis, 2008). EFL teachers in Greece are no exception to the above finding (Lemperou, Chostelidou & Griva, 2011; Rontou, 2012) and the need for an appropriate and effective teaching approach in order to facilitate the learning process for students with dyslexia is also apparent.

Methods

119 3rd graders from 6 elementary schools in Attica were randomly allocated to each research group. According to the experimental design, 56 participated in the experimental group who were taught “The Word-O-Saurs” programme for 12 hours over a period of 4 weeks, while 50 students in the control group were taught „business-as-usual” EFL instruction for the same amount of time. All students were assessed by completing standardised LD screening tests before the start of the research, and also with non-standardised tests of vocabulary, spelling, reading comprehension, and word and pseudoword decoding skills in English before and after the intervention. Students in the experimental group were taught “The Word-O-Saurs” by their regular EFL teachers which implicated the Direct and Explicit Instruction (Carnine, Silbert, Kameenui, & Tarver, 1997) of cognitive and metacognitive strategies of phonological awareness, phonics, vocabulary, and reading comprehension skills.
Results

This study found that (a) the experimental group was significantly better at reading comprehension than the control group as a whole sample and in most of the difficulties subgroups, (b) the experimental group showed a trend toward significance for being better at word decoding for students with SEN and word decoding difficulties, and (c) the control groups was found better than the experimental group at vocabulary knowledge. Social validity measures revealed that the curriculum was acceptable and effective.

Conclusions

“The Word-O-Saurs” programme was revealed to be significantly better than „business-as-usual” EFL instruction for beginner students with and without LD or SEN for reading skills, despite the higher vocabulary results of the control group.
Round Table Discussions

1. Handwriting or Typing: Controversy in Writing Instruction
Meeting Room Number 1
Evmenova Anya, Mason Linda & Regan Kelley- George Mason University

Abstract

A call to action for improving writing instruction in the USA has gained momentum as national and state mandates require assessment of writing skills across grade levels for all students. However, many students, especially those with learning disabilities continue to struggle with writing. According to the most recent NAEP report, only 1% of students with disabilities in 4th, 8th, and 12th grades perform at or above the proficient level in writing (National Center for Education Statistics, 2012). Some research has shown the effectiveness of technology to support students’ writing (Evmenova et al., 2016; Morphy & Graham, 2012) In fact, in some cases technology has an advantage over the paper-pencil conditions (Englert et al., 2007; Good, 2019). At the same time, many students do not keyboard as fast as they handwrite due to inefficient keyboarding skills (Weigelt-Marom & Wentraub, 2018). In addition, handwriting has been associated with early language development (Berninger & Abbott, 2003). So controversy exists about whether handwriting instruction should be eliminated and substituted by the keyboarding instruction. This discussion will focus on the benefits of both technology and handwriting as well as on the appropriate time for the shift from handwriting to technology.

Summary

Presenter 1 – Technology:

Various programs make the writing process easier for students with and without disabilities. For example, word processing has been associated with improving the writing quantity and quality effects for K-12 students (Morphy & Graham, 2012). A moderate effect size deemed word processing as an effective writing strategy in the Writing Next report (ES = 0.55) and in Graham and Perin’s meta-analysis (2007). In addition, a meta-analysis of studies of word processing with students (k-12) indicated that its use had a moderate effect size (ES = .50) on quantity and a smaller effect size (ES=. .41) on the quality of student writing (Goldberg, Russell, & Cook, 2003). Technology-based programs allow students with learning disabilities to easily and quickly produce legible characters removing problems associated with handwriting and enhancing the ability to proofread legible text (MacArthur et al., 2009). Students can easily revise their writing by adding and/or deleting text as needed, making complete re-writes unnecessary. Spelling and mechanics of writing are de-emphasized, removing the fear of making mistakes and being adventurous with vocabulary choices (Evmenova et al., 2010). Organization and manipulation of ideas is made easier through cutting and pasting, allowing students to focus on what they are writing rather than how (Evmenova et al., 2016; Regan et al., 2017).

In addition, technology makes incorporating numerous support strategies in the Universal Design for Learning fashion much easier. For example, a technology-based graphic organizer developed by the Project WeGotIT! embeds strategy instruction or IDEAS mnemonic; self-
regulated learning strategies including goal setting, self-instruction, self-monitoring, and self-efficacy, and self-evaluation; as well as additional supports such as text-to-speech, audio comments, text hints, color coding, etc. After using TBGOs with more than 1,000 students including 685 struggling writers, all struggling writers and even the vast majority of typically developing students showed improvements in the quality of their writing, many students also improved on the quantity of essay writing. This work provides evidence for the effectiveness of technology implementation to support struggling writers, including those with learning disabilities.

Presenter 2 – Handwriting:

Many students with learning disabilities struggle with handwriting (Mason, Harris, & Graham, 2013). Although the use of technology has mitigated some of the issues with handwriting that students with learning disabilities may face, reliance on technology is not always the answer for all students. Additionally, research indicates that handwriting still has relevance. The visual-motor skills developed in handwriting, for example, are linked with academic achievement; therefore, it is important for teachers to address early handwriting skills. (The American Academy of Pediatrics: Chassiakos, 2017). Graham, Harris, and Fink (2000) substantiate that students with unreadable handwriting lack a fundamental skill needed for the writing process and for expressing meaning. Importantly, students with poor handwriting often avoid writing and believe they cannot write (Berninger, Mizokawa, & Bragg, 1991).

It is essential to provide handwriting instruction to students with learning disabilities to help alleviate the negative effects of poor transcription on writing abilities (Graham & Harris, 2005). Best practice for teaching handwriting should begin early by first teaching students to (a) hold a pencil correctly and (b) to form letters correctly and fluently (Graham 1999, Graham, Bollinger et al., 2012). While it is critical that handwriting interventions are provided as early as possible so that students can achieve parity with their grade-level peers, handwriting instruction for students with learning disabilities is often delayed (Graham, Harris, & Fink, 2000). In a survey about classroom instruction for handwriting, although many primary grade teachers reported spending 70 minutes per week on handwriting instruction, these same teachers reported feeling inadequately prepared for teaching handwriting, and therefore may not be using best practices in their instruction (Graham, Harris, Mason, Fink-Chorzempa, Moran, & Saddler, 2008). The discussion regarding handwriting instruction will focus on the relevance of handwriting instruction for students with learning disabilities in the context of teachers’ knowledge and the instructional time needed for effective learning.

Presenter 3 – Transitioning from Handwriting to Technology:

“One of the first things educators can do to ensure that students with special needs develop good writing skills, besides teaching them spelling and basic writing processes, is to provide them with formal handwriting instruction” (Cahill, 2009). Whereas special education elementary teachers may provide supplemental handwriting programs for students with LD who struggle with writing (e.g., Handwriting Without Tears, Big Strokes for Little Folks), this quote may invoke confusion for teachers of fourth graders who readily assume that students have acquired print and/or cursive competencies in or before 4th grade. It also may puzzle teachers
who identify that legible writing is only a requirement of the Common Core State Standards (CCSS) in Kindergarten and 1st grade. Although some states have elected to extend Common Core Standards and provide handwriting instruction through grade four, the CCSS emphasizes keyboarding skills beginning in grade two. When can a teacher shift his/her expectations of students’ writing from handwriting to keyboarding? And should they?

Research suggests that handwriting instruction can improve reading at the word level for first graders (Berninger et al., 2006) and text generation in beginning writers (Berninger et al., 1997). When writing by hand, the movements involved leave a motor memory in the sensorimotor part of the brain, which helps individuals recognize letters in print. In addition, psychologists identified that for young children at the prewriting stage, the physical act of writing a letter engaged three areas of the brain’s motor pathways, which was significantly more activity than when children just typed or traced the letter (James & Engelhardt, 2012). Finally, research indicates that writing by hand may strengthen the ability to capture and retain complex material (Mueller & Oppenheimer, 2014). By producing handwritten notes, an individual is allowed to process and reframe the message whereas when note taking occurs on a keyboard, it is typically verbatim and thus involves a ‘shallower processing’ (Muller & Oppenheimer).

The benefits to handwriting certainly cannot dismiss the need to prepare students for their technological future. Although keyboarding is typically not a primary mean of written communication for students with learning disabilities, it is a critical skill that is clearly relevant in education today. The keyboarding requirements are intentionally vague in the CCSS, leaving teachers left to tease apart the subskills of keyboarding beginning in the early grades. For example, students would need fine motor skills before full keyboarding. Teachers would first need to identify the pre-keyboarding skills (e.g., drag-and-drop) and scaffolds that need to be in place for a student prior to full keyboarding expectations. Another point of discussion is for learners with learning disabilities in the upper grades, specifically. They may present with challenges of learning among different dimensions – content, language, and technology. Is it reasonable to ask students, such as dually identified English Language Learners to make progress across all of those areas?
2.Cyber-Victimization among Higher Education Students with and without LD as Related To Academic and Personal Factors
Meeting Room Number 2
Olenik-Shemesh, Dorit, & Heiman, Tali, -The Open University of Israel

Abstract

This study examined the cyber-victimization experience of 1,052 higher education students with and without learning disabilities. All participants completed five online questionnaires regarding cyber-victimization, social support, self-perception, well-being, and body perception. Results revealed that compared to students without learning disabilities, a higher proportion of students with learning disabilities reported cyber-victimization. Positive associations were found between students with learning disabilities and cyber-victimization, and negative correlations between students with learning disabilities, self-perception and well-being. Regression analysis indicated that for students with learning disabilities, predictors of cyber-victimization were low social support, low self-perception, and being female, whereas for students without learning disabilities, the predictors were low social support, low well-being, and low body perception.

3.Reading, Math, and Science Performance Across PISA Countries: Relationships with Socio-Economic Factors and Special Education
Meeting Room Number 3
Chairman: Anastasiou, Dimitris - Southern Illinois University

Abstract

This project consists of three studies that investigate the relationships among socioeconomic factors, educational context special education coverage (SEC), and education outcomes, using countries participating in the Program for International Student Assessment (PISA) as the unit of analyses. Three socioeconomic factors were considered across the three studies: (a) gross national income per capita, (b) Gini index measuring income inequality within countries, and (c) female adult literacy. Two kinds of education outcomes were examined: (a) school life expectancy (SLE), and (b) reading, mathematics, and science performance in the PISA 2009 and 2010 assessments. Using three structural equation models (one for reading, one for math, and one for science), socioeconomic factors, educational context factors and SEC were linked to math and science outcomes and tested on 67 PISA countries. The three structural equation models accounted for 67-71% of the variance in SLE, and 80%, 85% and 83% of the variance in reading, math, and science respectively. Noteworthy, SEC contributed significantly to SLE in all three models. In addition, SEC contributed significantly to reading and science performance but not to mathematics performance. Finally, the roles of national economy and special education in predicting school, reading, math and science attainments are discussed.
4. “Appropriateness” of Special Education for Students with LD?
Meeting Room Number 4

Chairman: Scalon, David, Boston College
Presenter: Berkeley, Sheri, George Mason University
Presenter: Calhoon, Mary Beth, University of Miami
Presenter: Grosche, Michael, Bergische Universitat Wuppertal

Abstract

Globally, inclusion has emerged as the preferred approach for students with LD, based on calls for equity and efficiency. In the United States, when federal law first required “free and appropriate public education” (FAPE) for students with disabilities, discussions primarily revolved around appropriateness of placement in separate versus more inclusive settings. The debate evolved into concerns with “access to the (general education) curriculum.” Now more recently, tiered-systems of support are altering or, more often, supplanting the special education process. In Germany, and several other countries, inclusion began later and with the closing of specialized schools for students with LD.

What is appropriate education for students with LD in this era of inclusion? The presenters will address implications of placement, curricular, instructional, and teacher preparation practices in their own and other nations. How various education systems arrived at their present models of inclusion will also be considered. Session attendees will share their perspectives on the factors that should guide inclusion and service delivery as well.
A) Learning Disabilities

A1. University Faculty Attitudes and Knowledge About Learning Disabilities

Marlyn Khouri, Orly Lipka & Michal Shecter-Lerner

Information:

Ms. Marlyn Khouri. M.A. in diagnosis and treatment of learning disabilities in children and adults from Haifa University, Israel.

Abstract:

Adult students with learning disabilities (LD) represent one of the fastest growing populations of students attending institutions of higher education. Faculty members play an important role in the adjustment and success of these students. The current study examined the level of contact, attitudes, knowledge, and training of faculty members with respect to students with LD. Results demonstrated that faculty members overall had a significant amount of contact with and held positive attitudes towards students with LD. However, it appeared that faculty members would benefit from information regarding the current definition of LD, related legislation about LD and other disabilities, training and support services for students with LD. Implications for practice and further research are discussed.

A2. Appreciation and Comprehension of Verbal Jokes by Middle School Students with and Without Learning Disabilities

Author: Hsu, Han-Fang, The Affiliated Senior High School of National Kaohsiung Normal University

Presenter: Wang, Chiung-Chu, National Kaohsiung Normal University

Abstract:

The purpose of this study was to investigate the appreciation and comprehension of verbal jokes by middle school students with and without learning disabilities (LD). The participants included 53 middle school students with LD and 162 students without LD. Two tests were administered: a 5-point joke appreciation scale and a multiple-choice joke comprehension test. Verbal jokes included three types of jokes: phonological jokes, syntactic and semantic jokes, and illogical jokes. Two kinds of non-jokes, incongruity jokes and incongruity-removed jokes, were also included in the joke appreciation scale. Each joke type had 5 items. Participants were asked to rate the levels of funniness from point 1 (not funny at all) to point 5 (funniest). In the joke comprehension test, participants were asked to choose one out of three choices to fill in a
statement to make it the funniest. Results indicated there was no difference between students with and without LD in joke appreciation test. The comprehension of three joke types by students with LD was significantly lower than students without LD. Both groups performed better in the comprehension of phonological jokes, syntactic and semantic jokes than illogical jokes. Illogical jokes comprehension was the most difficulty for all.

A3. A Causal Model in Students with Learning Disabilities: The Relationships between their Prior Academic Achievement and their Teachers and Parents Expectations

Information:

Celestino Rodríguez, José Carlos Núñez, Estrella Fernández, Ellian Tuero & Rebeca Cerezo - Department of Psychology, University of Oviedo (Spain)

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Abstract

Research suggested that the relationship between previous academic achievement and student variables is mediated by parent and teacher expectations of the child’s ability and future success. Goal study was to analyze the mediating role of parent and teacher expectations between previous academic achievement and student variables with SLD that are significant for school learning. Participants included 230 students with SLD from Spain from 10 to 14 years. Extrinsic variables influenced the students’ intrinsic variables even more than the students’ own experiences of academic success or failure. The way in which teachers in the child’s academic life respond to prior results and the expectations they form, can affect their intrinsic procedures, and ultimately the children motivation, involvement and persistence in learning.
A4. The Self-Awareness of Learning Disabilities and the Resilience of College Students with Learning Disabilities

Presenter
Li-Yu Hung, Ph. D.
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Co-Author
Chiung-Chen Tseng, Ph. D.
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Abstract
The study aimed to explore the relationship between self-awareness and resilience of the college students with learning disabilities. Using resilience viewpoint to understand the ways of self-awareness of learning disabilities in college students is important because the process about self-control or self-regulation of individuals with the invisible disabilities. Three LD college students were interviewed in the narrative approach and their stories were analyzed with the focus on the ways of self-awareness of learning disabilities. The result reveled LD college students perceiving him-/herself in academic and nonacademic content. The social support from others, taking good advantage of turning points, and reframing self with learning disabilities were positive factors facilitating self-awareness. The process of self-awareness was constructed as outside-inside-outside. Reframing him-/herself with learning disabilities foster the resilience to the future challenges.
A5. Developing a coding system for a typology of “learning disability” definitions
Michael Grosche¹, Gunnar Bruns¹, Lea Pulst¹, Matthias Grünke², David Scanlon³, & Georgios Sideridis⁴

Information:

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Abstract

Based on the roundtable discussion at the previous IARLD conference (Grosche, Grünke, Scanlon, & Sideridis, 2018), we present a coding system for a content analysis to systematize various global definitions of “learning disabilities” (LD). The heterogeneity of the LD concept across and within different countries/cultures (Grünke & Cavendish, 2016; Scanlon, 2013; Sideridis, 2007) calls for a systematic analysis to identify a common core and country-specific differences among definitions.

To optimize the coding scheme deduced from our last roundtable discussion, two independent raters analyzed different conceptualizations of LD from a series of publications of various countries in a special issue of “Learning Disabilities: A Contemporary Journal” (2016), each explicitly defining the term LD. We combined them into one coherent context to develop a typology of concepts and their shared or disjunctive aspects.

The international audience at the IARLD conference is invited to contribute to our interactive poster by completing their respective definitions of LD, as triggered by the categories identified in the content analysis. Their responses will be used as feature space (Kuckartz, 2016) to infer different types of LD concepts. We will present a synthesis of global definitions of LD and their common core in an upcoming paper.
A6. The Simple View of Reading- It's not so simple for students with Learning Disabilities
Tami Sabag-Shushan, Tami Katzir

Information:

Ms. Tami Sabag Shushan, doctoral student, Department of Learning Disabilities, Haifa University, Israel. Colleague of Ph.d program of ISEF Foundation.
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Abstract

This study examined the linguistic, reading comprehension and theory of mind profiles of typical readers, Hebrew language learners, and students with learning disability in fourth and fifth grade. We administered to 240 fourth and fifth grade Hebrew-speaking students an assessment battery of vocabulary knowledge (emotional and non-emotional), reading comprehension ability (simple and complex understanding) and theory of the mind measures. Based on previous diagnosis, home language history questionnaires, and reading fluencyscores, students were divided into the following groups: high and medium aching typical readers, poor readers, (PR) students with learn disability (LD), and Hebrew language learners (HLL). The LD group and the HLL were both lower than typical readers as well as the poor reader group on the vocabulary and reading comprehension tasks. However, the children with LD were lower also on the TOM task where the HLL were relatively less impaired in this area. These findings suggest that different groups of struggling readers portray different profiles and the LD group the most impaired across linguistic and social processing domains.
A7. Self -Concept for Reading in Greek Elementary School Students with Reading Difficulties

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Abstract

The «Reading Self Concept Scale» (RSCS) (Chapman & Tunmer, 1995) was adopted into Greek in order to study a) the factor structure of the Greek adaptation using exploratory factor analyses, b) the reliability (internal consistency) of the scale c) its associations with reading achievement measures. The first group (N=501) included typical students (2nd-6th grades) and the second group (N=62) students experiencing difficulties in learning and low reading achievement. Students were assessed individually with a battery of reading measures consisting of word and pseudoword decoding, reading fluency and reading comprehension. The component structure of the Greek adaptation of RSCS found to match closely the three-factor structure reported by Chapman and Tunmer (2003). Indices of internal consistency were satisfactory for each component (Cronbach’s a = .80, .71, and .86). Relations between perceptions of competence and attitudes were confirmed by the analyses while lower positive correlations were found between the difficulty and competence factors and the difficulty and attitude factors. These findings could offer valid insights to self-system factors and could be utilized in planning comprehensive school intervention programs for improving academic achievement.
B) Reading and Reading Disabilities

B8. Reading and Arithmetic difficulties: Unique and Common Characteristics Among Second Graders
Shelley Shaul, Phd. & Orit Izraelov

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Abstract

Objectives

The connection between the linguistic domain (specifically reading) and the mathematical field is not surprising due to the similarity between the acquisition of the number and letter concepts. In both cases, arbitrary symbols (numbers, letters) represent abstract referents (quantities, sounds). (Bialystok & Codd, 1997).

There is an assumption that literacy and math share cognitive basis, and different cognitive may underpin both domains. Such as phonological awareness (Moll, Snowling, Göbel & Hulme, 2015), Naming abilities (Leppanen, Aunola, Niemi, & Nurmi, 2006) and Executive Functions (Willoughby, Kupersmidt, & Voegler-Lee, 2012). Although many studies have found that reading and calculating skills share joint cognitive mechanisms (Koponen et al., 2016), there are unique skills which contribute to each ability like spatial skills in mathematics (Zhang et al., 2014), and the contribution of each skills is different to each ability.
B9. Diagnosing dyslexia in higher education through L2 English
Dr. Wim Tops- Centre for Language and Cognition Groningen University of Groningen

Abstract

Background
More and more students with learning disorders enter higher education. Due to an increasing linguistic diversity across the globe, universities also see the number of international students with an indication of dyslexia grow. However, universities usually cannot diagnose or assess international students in their first language. An alternative is to assess international students in their language of instruction, which is usually English.

Objectives
The aim of this study is to make an adaptation of an existing test battery (The York Adult Assessment-Revised or YAA-R; Warmington, Stothard, & Snowling, 2013) for the purposes of assessing L2 English speakers through the collection of normative data. Moreover, we want to investigate whether dyslexia can be reliably and validly tested in students’ second language which is English.

B10. Orienting of Attention in Reading-Disabled Children: An ERP Study
De Groot, Barry & Van Den Bos, Kees, University of Groningen

Abstract:
This study investigates the hypothesized link between reading disabilities and aberrant visuospatial orienting of attention in a heterogeneous sample of Dutch poor reading children, supplemented with normal reading peers. A visuospatial cueing task (VCT) with three cueing conditions was employed in conjunction with word reading tests and phonological measurements. VCT measurements comprised posterior event related potentials (N2) along with overt performance measures (response times and task accuracy). To accommodate for expected nonlinear effects, data were analyzed using generalized additive modeling (GAM). Results indicate that visual orienting of attention significantly adds to the prediction of reading, particularly in the poorer performance regions.
B11. A specific serial order learning deficit as a causal explanation for dyslexia? Examining the role of verbal and nonverbal material in serial order learning.

Information
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Abstract
According to Cowan et al. (2017) dyslexic children are impaired in serial order learning in multiple modalities. They argue that because serial orderings of verbal and spatial elements occur in reading, a serial order deficit may explain reading problems in dyslexia. However, a number of methodological weaknesses can be noticed. First, they did not control for attentional functioning. Secondly, they did not control for item STM when examining a specific serial order STM deficit. In our study we used a design in which item vs. serial order STM tasks and verbal vs. nonverbal item material are bifactorially manipulated. The results of our study will provide empirical evidence regarding the serial order STM deficit hypothesis as a causal explanation for dyslexia.

B12. The effects of a 2-year tier-2 reading intervention on G1 students’ reading growth: An experimental study on Intervention length & retention effects

Information
Presenters: Shu-Li Chen & Shih-jay Tzeng, National Taitung University
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Abstract
Fifty-two grade 1 struggling readers in Taiwan, in which 33 and 19 students in the experimental and contrast groups respectively, participated in the study. We provided a 2-year reading
intervention to the experimental group while the contrast group received regular after-school assistances by schools. Three major findings are:

1. The experimental group outperformed the contrast group on the progress of Chinese phonetic symbols and character recognition at the ends of the first and second year; 2. More percentages of students in the experimental group returned to the peer level than the contrast group did. 3. Data showed that the longer the length of intervention, the better the results. Besides, the intervention effect remained in the third year.

B13. An examination of oral language in young students with specific reading comprehension difficulties

Information:

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ii) Margaret David, Mount Saint Vincent University 166 Bedford Hwy, Halifax, NS Canada, B3M 1J6, 902 457 6454, 902 457 4911 (fax), Margaret.David@msvu.ca

Abstract

Students with specific reading comprehension deficits are less well studied than those with word reading impairments. Oral language comprehension has been associated with individual differences in reading comprehension. We compared second and third grade students with specific reading comprehension difficulties, as well as those with word reading deficits, to typically achieving peers (N=45) on measures of decoding-related skills and oral language processes. Both groups of students with reading difficulties had poorer morphological awareness than typically achieving students. In addition, readers with specific comprehension difficulties performed worse on a listening comprehension measure. Understanding which aspects of oral language are impaired for young children with specific reading comprehension difficulties may help inform future intervention research.
B14. Examining cognitive-linguistic correlates among skilled and poor readers in Chinese and in English

Information

Catherine McBride (cmcbride@psy.cuhk.edu.hk, Department of Psychology, The Chinese University of Hong Kong),
Ying Wang (yingwang@tsinghua.edu.cn, Department of Psychology, Tsinghua University),
Christine Kong-Yan Tong (christinekytong@gmail.com, Department of Psychology, The Chinese University of Hong Kong), and
Connie Suk-han Ho (shhoc@hku.hk, Department of Psychology, The University of Hong Kong)

Abstract

This study investigated cognitive-linguistic correlates of reading performance for Chinese-English learners. Participants were grouped by their reading performance into skilled and poor readers in Chinese and in English. Results revealed that more metalinguistic skills were associated with reading performances for skilled readers. Specifically, different skills accounted for reading performance for skilled and poor readers, and the skills associated with poor reading differ by language. Our results have practical implications in developmental and educational psychology.

B15. Effort and effortlessness in the development of word recognition fluency

Adi Shechter & David L. Share- Haifa University

Abstract

Among disabled readers, word reading is typically slow, error-prone and effortful. However, the study of word recognition has overlooked the crucial issue of effort. In both Experiment 1 (university students) and Experiment 2 (4th-6th graders), we explore the applicability of pupillometry to the study of cognitive effort in word reading. We compared pupil dilation, accuracy, and RT for naming familiar and unfamiliar letter strings. In each experiment, we found a greater degree of cognitive effort, as assessed by pupil dilation, lower accuracy and slower RT for unfamiliar strings compared to familiar words, varying in length (3 vs. 5 letters). Our findings open up new possibilities for studying the issue of effort and effortlessness in the field of word recognition fluency.
B16. Summaries vs. Truth Value Judgement: Reading Comprehension Skills of Dutch Students with Dyslexia
L. Rouweler, B. Maassen & W. Tops

Abstract

Reading is an important skill in higher education (Onwuegbuzie & Collins, 2002). This is particularly challenging for students with dyslexia who continue to have problems with text decoding, reading comprehension, or both (Gough and Tunmer, 1986). In this study, we compared the reading comprehension (RC) skills of students with and without dyslexia. Students were matched on age, gender and field of study and were tested for language proficiency and RC in both Dutch (L1) and English (L2). For the RC tests we differentiated in answering modes: free recall versus true false judgement. Results showed that students with dyslexia were worse than their non-dyslexic peers in answering inferential questions in Dutch and in writing summaries for English.

B17. Relation between Rapid Automatized Naming (RAN) and Reading Skills in Lithuanian
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Abstract

The main goal of this study was to investigate the relationship between rapid letter and digit naming abilities and emergent reading skills in Lithuanian language. For this purpose, 92 children of 1st grade were given a battery of tasks including two RAN measures, tasks of reading words (real words and pseudowords), text and reading comprehension. Correlations and linear regression analyses were carried out to explore this relationship. The results of this study revealed a significant relationship between RAN measures on the one hand and reading speed and accuracy on the other. This suggests that rapid automatized naming ability is a key component in reading acquisition in Lithuanian and can be used as a good predictor of 1st graders’ emergent reading skills.
B18. Volumetric and Surface Characteristics of Gray Matter in Adult Dyslexia and Dyscalculia

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Abstract

Dyslexia and dyscalculia are associated with impairments in reading and numeracy. Neuroimaging studies have reported differences in gray matter volume between dyslexics and typical readers, and between dyscalculics and controls, in various brain regions. The findings are inconsistent and no studies have looked comorbid disorder. We examined whether dyslexia, dyscalculia, or their comorbid manifestation are related to volume and surface characteristics of gray matter (N=48 adults). We found no evidence for differences in gray matter volume and surface characteristics associated with either group. This was further quantified with Bayesian inferential methods. Together, this suggests that neuroanatomical differences associated with dyslexia and dyscalculia might not be as reliable as previously thought, or that they may not persist into adulthood.

B19. Are visual impairments affecting people with developmental dyslexia? A comparison between dyslexic and typically developing readers

Provazza, Serena, Liverpool John Moores University

Abstract

Developmental dyslexia (DD) is a neurodevelopmental disorder characterized by difficulties in reading aloud with normal or correlated to normal intelligence. Theoretical accounts of DD focus on a verbal deficit at the core and, sometimes, proposed as the unique cause of DD. Despite evidence indicating that the core deficit in DD lies within the linguistic domain, this view does not entirely encompass the heterogeneity of the difficulties presented by people with DD. For example, not all individuals with DD manifest verbal impairments. Such heterogeneity in DD raises the interesting possibility that different performance patterns might actually reflect distinct underlying cognitive impairments.
C) Mathematics

C20. Web App Training "I bambini contano" in children with mathematical difficulties
Author: Porru A.; Pedron M.; Re A.M.; Benavides-Varela S.; Penna M.P.; Lucangeli D.

Abstract
The present study evaluated the effectiveness of a shortened, specialized and digitally supported training program for enhancing numerical skills in primary and secondary school children with Mathematical Difficulty. The participants (n = 57) were randomly assigned to two groups: for the experimental group the tasks were differentiated and adapted to each student’s learning profile and they used a Web App i.e., “I bambini contano”; for the control group the difficulty of the activities was graded according to the school curriculum, moreover this group did not use the Web App. Pre- to post-training measurements showed that children of the experimental group had an improvement significantly higher than the control group, in particular in arithmetic facts and written calculation.

D) Writing

D21. The predictive role of Attentional Processes over writing in 2nd and 3rd grade using the Cognitive Assessment System
Lucia Bigozzi, Chiara Malagoli- Department of Education and Psychology, University of Florence, Florence, Italy

Abstract
Attentional processes are crucial in supporting writing. Visual attention processes seem to be important in early years whereas active attention components emerge as central in supporting writing accuracy later on. Attention, in fact, is documented to develop throughout a continuum, in ADHD (Polderman, et al. 2007) and in the typical population (Suades-Gozàles et al., 2017). This study aims to investigate the predictive links between attention processes and writing, in a transparent language, in second and third grade of primary school, focussing on specific errors (homophones and non-homophones). Participants:121 children (59 males) age range 7.6 -9.4 years. Results: visuospatial, active attention and planning emerged as important skills in supporting writing in second grade, whereas in third grade attentional components seem to affect homophone errors.
D22. Writing: Focus on elementary students with and without LD
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Abstract:

This study examined the writing outcomes of K3-5 elementary students with and without a learning disability on the statewide assessment and curriculum-based measures. While curriculum-based measures significantly correlated with the statewide assessment on writing for students without disabilities, the correlation was not significant for students with a learning disability. However, multiple regression analysis revealed that the overall English language arts score on the statewide assessment was a strong predictor for the writing score on the state assessment for students with and without a learning disability. Qualitative analysis of writing to a prompt revealed the most frequently occurring errors in writing of students with a learning disability.
E) ADHD and Neurodevelopmental Disorders

E23. Adults with ADHD and imprisoned, a retrospective view

Information:

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Abstract

This study aims to analyse the association between retrospective and current symptoms of ADHD in adulthood for two different populations: Imprisoned Vs. Clinical samples. 457 participants were divided into four groups: ADHD prison group, non-ADHD prison group, ADHD clinical group and non-ADHD clinical group. All of them completed two different scales: ADHD Rating Scale-IV and Wender Utah Rating Scale. The results indicated that: 1) there was a positive association between current and retrospective symptoms of ADHD; 2) great rates of persistence of the ADHD symptoms; 3) ADHD groups showed higher impairment at both childhood and the current moment, and 4) current symptoms of ADHD, along with retrospective symptoms from WURS, only predicted the current impairments in the ADHD clinical group.
E24. Evaluating structural and pragmatic language skills in young children with Attention Deficit/ Hyperactivity Disorder, Developmental Language Disorder and Typical Development.

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Abstract

Aim: Structural and pragmatic language have been proven vital for academic achievement (Catts, Adlof, Hogan & Weismer, 2005), employment (Lewis, Woodyatt & Murdoch, 2008), social and emotional development (St Clair, Pickles, Durkin & Conti-Ramsden, 2011; Whitehouse, Watt, Line & Bishop, 2009). Children with Developmental Disorders present various types of language difficulties, impeding everyday communication but besides Developmental Language Disorder (DLD) only few studies have evaluated thoroughly language profiles of children with other developmental disorders, such as ADHD. In this study, we aimed to thoroughly and directly assess structural and pragmatic language of children with ADHD –by comparing them with neurotypical and DLD peers- in order to ascertain areas of relative strength and weakness.
F) Executive Function

F25. Executive functions in pupils with specific and nonspecific learning difficulties within a Five-step model of comprehensive support in higher grades of elementary school

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Abstract

This study presents findings related to different dimensions of executive function (EF) in a sample of 344 elementary school pupils classified in three groups: pupils without any learning difficulties (NLD), pupils with learning difficulties (LD) who receive Step one intervention (complementary instruction – CI), and pupils with severe specific learning difficulties (SpLD) who receive Step five intervention (additional professional support – APS) within a Five-step model of support. Subsequently, in-depth comparisons between the pupils attending CI, APS or both interventions (CI and APS) are presented. Statistically significant differences in some dimensions of EF skills were found between the NLD and LD, and NLD and SpLD group as well as within subgroups of pupils with different types of interventions. Implications for improving effective support within the Five-step model are discussed.
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Abstract
Previous researchers suggested that learning to read Chinese particularly rely on executive functions for coordinating the complex mapping between features of print. Therefore, the present study examined whether Chinese poor readers exhibited weaknesses in a range of executive function skills. 50 poor readers (aged 5.25) and 50 average readers (aged 5.23) were identified from a sample of 201 Chinese children in Hong Kong. They were assessed with tests of Chinese word reading, nonverbal IQ, cognitive flexibility, working memory, and inhibition control. ANOVA results showed that poor readers were significantly weaker at cognitive flexibility and working memory, but not at inhibition control. Moreover, poor readers showed weakness in concurrent flexibility but not in consecutive flexibility.

F27. Kindergarten Classroom Engagement skills Predict Wellbeing at the end of High School
Presenter: Fitzpatrick, Caroline, Université Sainte-Anne
Author: Pagani, Linda, Université de Montréal

Abstract
Our research examined how classroom engagement, an important indicator of executive functioning, predicts bio-psycho-social wellbeing. Kindergarten teachers assessed classroom engagement in 966 children. Children then provided data on wellbeing at age 17. Multiple regressions revealed significant associations between classroom engagement and later grades (β=.15, p<.01), dropout risk (β=−.16, p<.01), school engagement (β=.11, p<.05), experiencing bullying (β=−.11, p<.01), and substance use (β=−.16, p<.01). Using logistic regression, classroom engagement was associated with a 248% increase in the odds of participating in physical activity and a 56% reduction in the odds of being overweight. Several individual and family variables were controlled. Our results add to the literature linking education to health and suggest bolstering classroom engagement skills to improve education and population health.
F28. The Relationship of Teacher Ratings of Executive Functions to Emergent Literacy and At-Risk Status in Preschool Children
Hooper S., Costa L., Green M., Catlett S., Barker A., Fernandez E., Faldowski R.
School of Medicine, University of North Carolina-Chapel Hill

This study investigated relationships between executive functions (EF), as rated by teachers, and emergent literacy skills in young preschool children. The sample comprised 115 3-year-olds who were attending a preschool program for underserved children. Predictors included the teacher completed Behavior Rating Inventory of Executive Function-Preschool, while emergent literacy outcomes included the Teacher Ratings of Oral Language and Literacy, Test of Early Reading-3, and Test of Preschool Early Literacy. Findings revealed that teacher ratings of EF were significantly associated with all emergent literacy outcomes, with children at-risk for emergent literacy problems performing significantly below children not deemed at-risk across all measures. Results suggest the importance of teacher ratings in the identification of emergent literacy status in young at-risk preschool children.

G) Oral Language and Difficulties

G29. Beyond typical language difficulties: pragmatics among children in institutional care

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Antonia Pantazi, Postgraduate student, University of Athens

Abstract

The literature highlights the determining role of family and home environment in children’s development, and the detrimental effect of the lack thereof. Focusing on children in institutional care we investigated pragmatics (language in context). Twenty seven children ages 5-7 in institutional care and TD matched controls (for age and gender) were assessed through the pragmatics’ subscales of Logometro, (a tool detecting difficulties in language development): communication conditions, intention towards communication, responsiveness, and communication context. Results indicated that children in institutional care lag behind their TD controls in the global scale, and the subscales of communication conditions and responsiveness, but not in intention towards communication and communication context subscales. Evidence is briefly discussed relation to development of tailored interventions.
G30. The needs of support for LD youth with oral language difficulties: A case study
I-TING CHIU¹, LI-YU HUNG¹, CHING-JU LIN¹, ²

¹Department of Special Education, National Taiwan Normal University, Taipei, Taiwan
²Hsing Wu University, New Taipei City, Taiwan

Abstract

Objectives- Most youths with language-based learning disabilities (LD) faced the communication and language problems at home, in school and in society. Their disadvantages in language related competences, especially in spoken language, affect their self-identification, interpersonal relationships and further career development. However, most of these college youths do not have adequate environmental supports or learning opportunities for their special needs. The language and communication difficulties of the college students with LD are lack of attention in literature as well as in campus. They were found as silent and neglected during their college life. Therefore, this study aimed to investigate the needs of communication support in college LD students with oral language difficulties and to evaluate the feasibilities and effectiveness of the tailored communication training program. A reflection of researchers between therapy-based intervention and school-based curriculum is also being made.

G31. The relationship between communication competence and anxiety: A case study on two LD college students with oral language difficulties
Chinig-Ju Lin¹, Li-Yu Hung², I-Ting Chiu²

¹ Hsing-Wu University, New Taipei City, Taiwan
² Department of Special Education, National Taiwan Normal University, Taipei, Taiwan

Abstract

Objectives

Students with learning disabilities (LD) might have difficulties in oral language use. Recent evidence has also shown that these students demonstrate higher anxiety level than normal students, and their academic performance, social interaction, vocational development are highly related with anxiety (Nelson, J. M., & Harwood, H., 2011; Rodriguez & Routh, 1989). The causes of anxiety have been discussed as the "primary cause" and "secondary cause". Following this, Spreen further discusses the possible association between learning disability and anxiety from the "secondary reaction", "primary disorder", and "cerebral dysfunction"(Spreen, 1989). This study aims to conduct a case study on two college students (Jane and Zen, both 19-year-old sophomores) with both oral difficulties and high anxiety. The researchers design a language-based communication program to explore the relationship between communication ability and anxiety from the differences of participants’ communication needs and anxiety performance before and after the program.
H) Social/ Emotional/ Behavioral Functioning

H32. Academic Emotions in Literacy Processes among Fourth and Fifth Grades Readers
Shira Blicher, Michal Shany, Tami Katzir, Orly Lipka, Anat Prior

Information: Ms. Shira Blicher, M.A. in diagnosis and treatment of learning disabilities in children and adults from Haifa University, Israel.

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Abstract

The current study investigated relations between academic emotions and literacy processes among large sample of fourth and fifth grades students with different levels of reading fluency in the Hebrew language. The participants (n = 1,190) completed language assessment (i.e. reading fluency, vocabulary and Reading Comprehension (RC)), and self-reported questionnaires of academic emotions related to literacy learning in school. Results indicated that negative academic emotions and perception of control over learning added a significant contribution to RC performance, beyond the well-known contribution of reading fluency and vocabulary. In distribution of the sample by reading fluency levels, this contribution of academic emotions to RC was found to have different magnitude. The results emphasize the importance of emotions in literacy learning.

H33. Measuring affective aspects of reading among poor readers
Morfidi, Eleni & Nousias, Pericles- University of Ioannina

Abstract

An important psychological concept related with the role of affect in reading, is the reader selfefficacy. The purpose of the present study was to evaluate the relationship between self-efficacy, anxiety, and reading ability of students at late stages of schooling. Participants were 83 upper secondary school students (grades 10 & 11) (ages 15-17) from a semi-urban area in Greece. Two measures of self-efficacy have been used, namely the validated version of the Reader SelfPerception Scale (RSPS, Henk & Melnick, 1995), the Self-Efficacy Questionnaire for Children (SEQ-C, Muris, 2001) and the measure of anxiety developed by Friedman & Bendas-Orit (1997). The results indicate significant differences between high and low achievers as regards academic self-efficacy, cognitive obstruction, progress, observational comparisons and social feedback. Contrary to expectations, social and emotional self-efficacy, social derogation, physiological state and tenseness did not yield significant differences between the groups. Overall, the findings provide some support for the validity of the original construct. Socio-cultural factors, age, coping strategies and resilience are considered in order to shed light on aspects determining affect in reading.
H34. Academic emotions and reading motivation in students with LD

Abstract

The last decades researchers focus on the importance of the interplay between emotions, motivation, cognitive and environmental factors (e.g. parental style) related to learning. Pekrun’s Control-Value Theory of academic emotions and Self-Determination Theory served as theoretical frameworks of the present study which aims at examining the relationship between parental style, academic emotions and motivation of children with learning disabilities. The sample consisted of 58 students, 10-13 years old with learning disabilities. Participants completed measures of parental style, academic emotions and motivation in reading. Regression models analysis underscore the role of parenting style on students' type of motivation and its correlation with academic emotions, outlining its impact on performance tasks. The results are discussed in terms of their educational implications in conjunction to parental consultation.
I) Intervention Models- Instructional Issues

I35. A Pupil with Asperger Syndrome – a presentation of Asperger features with teachers' and a special teacher's descriptive grading

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Abstract

The Steiner Waldorf School provides opportunities for successful education, among others to pupils with Asperger syndrome (AS). An important element of their school curriculum is a positive approach toward developing and encouraging social skills, in addressing and solving social problems as they arise, and in encouraging pupils strengths. Results from a case study that qualitatively analyzes descriptive grades achieved by a pupil with AS, as conferred by teachers at the end of each grade of primary school, indicate that teachers and special teacher recognized pupil characteristics that align with diagnostic criteria for the autism spectrum disorder according to the category of social behavior in the DSM-V. The results also showed that in the earliest grades this pupil had difficulties with perception and motor skills, memory, and motivation for learning. These problems eased as the pupil learnt more and developed more social skills, and as focus was given to the pupil’s strengths.

I36. Assessing the Strategy Epi.com in Early Primary Education (Years 1 & 2)

Paloma González-Castro, Marisol Cueli, Celestino Rodríguez, Débora Areces, & Trinidad García . Department of Psychology, University of Oviedo

Abstract

Reading is a key factor in learning processes and one that poses many difficulties for students. The present paper aims at analyzing the efficiency of EPI.com in years 1&2 of Primary Education. The strategy EPI.com, aims at improving lexical, semantic and syntactic processes related to the reading process and reduce the difficulties of children in the reading acquisition. A total of 62 students (ages 6-8) were classified into an Experimental Group (EG; 38 students who worked with EPI.com) and a Control Group (CG; 24). All participants took the Illinois Test of Psycholinguistic Abilities and the Peabody test. Results showed the effectiveness of the strategy used with the EG, with better results in the variables related to syntactic and lexical processing.
I37. An Examination of General and Special Education Teachers’ Involvement in Facilitating IEP Development and Implementation.  
Cavendish, Wendy & Perez, Deborah – University of Miami

Abstract

A need for increased support for students with disabilities is evidenced as “Across the world, people with disabilities have… lower education achievements, less economic participation and higher rates of poverty than people without disabilities” (World Health Organization, 2011, p. 11). Efforts to address these disparate outcomes in the United States include provisions in the Individuals with Disabilities Education Act (IDEA, 2004) which explicitly mandates the inclusion of students as collaborative partners in the Individualized Education Program (IEP)/transition plan development process. Researchers have also noted that to implement the provisions of IDEA for meaningful IEP/transition planning, general and special education teachers must effectively collaborate (Friend, Cook, Hurley-Chamberlain, & Shamberger, 2010). Thus, this study examined perceptions of general and special education teachers related to facilitation of student involvement in IEP/transition planning and probed teacher views of implementing IEPs for students with learning disabilities (LD).

I38. Special Education Teachers’ Knowledge and Use of Assessment Data to Inform Instruction for Secondary Students with Learning Disabilities (LD)  
Cavendish, Wendy & Krawec, Jennifer- University of Miami

Abstract

Special education teachers are tasked with the collection and use of assessment and progress monitoring (PM) data to improve outcomes of students with LD (Collins et al., 2017). Although teachers understand the benefit of using data to inform instruction, the analysis of data is a challenge for many teachers (Ruble, McGrew, Wong, & Missall, 2018). Specifically, they struggle to effectively generate and interpret data for instructional use and often do not have opportunities to increase their skills (Hubbard, Datnow, & Pryun, 2014). Mandinach and Gummer (2013) identified inadequate training and professional development supports as a contributing factor to this on-going difficulty for practicing teachers. Thus, this study analyzed secondary school teachers’ selection, understanding, and use of assessment data for data-based decision making (DBDM) for instruction of students with LD.
I39. Teachers’ viewpoints on criteria for evaluating stories written by fifth graders
Kloepfer, Carsten- University of Cologne

Abstract
Literature on the effectiveness of interventions fostering writing performance in children often ignored the perspective of teachers on what constitutes a good text. In this qualitative exploratory study we asked a number of experienced language arts teachers to appraise different stories written by fifth graders, using a visual analogue scale. Subsequently, we interviewed them to elicit why they rated different texts differently. The results revealed that a stringent storyline, lexical diversity, and a couple of other characteristics seemed to be the most relevant features of a good narrative. The results provide meaningful insights into what aspects need to be fostered in struggling writers in order to prevent or remedy written language disorders.

I40. Teaching metacognitive strategies to enhance reading comprehension of online informational texts: a pilot study of Greek elementary school students with and without learning difficulties
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Abstract
Online reading has now become a vital skill for schoolwork and everyday life but contrary to traditional reading comprehension which has been extensively explored during the past decades it still remains an under-researched area. Recent findings suggest that online reading requires different cognitive processes, skills and strategies but research on intervention studies focusing on the needs of elementary students with or without learning difficulties is scarce. The aim of this study is to design, implement and evaluate a teaching intervention with procedural facilities within a blended reading environment, in order to determine whether the development of metacognitive knowledge and strategies has positive effects on comprehension of online informational texts of Greek 5th grade students with and without learning difficulties.

Keywords: metacognitive strategies, online reading comprehension, informational texts, learning difficulties
Abstract

Single-case research has become an important and broadly accepted method for gaining insight into educational processes. Visual inspection (or visual analysis; Barton, Lloyd, Spriggs, & Gast, 2018) is a common strategy for the analysis of single-case data (Davis et al., 2013; Lane & Gast, 2014). It is also one of the most controversial strategies. In visual analysis, a person, usually the investigator, draws a conclusion from the effectiveness of an intervention solely based on the inspection of a diagram comprising measurement times, values, and the beginning of the intervention (Spriggs, Lane, & Gast, 2018). Critics argue that visual analysis yields low inter-rater reliabilities (DeProspero & Cohen, 1979; Park, Marascuilo, & Gaylord-Ross, 1990; van den Bosch, Espin, Chung, & Saab, 2017). Furthermore, the presence of a baseline trend (i.e., a positive lag-1 autocorrelation), increases the rate of type-I errors substantially (Allison, Franklin, & Heshka, 1992; Matyas & Greenwood, 1990). In these studies, visual judgments were usually compared to the results of statistical procedures (e.g., Brossart, Parker, Olson, & Mahadevan, 2006; Brossart, Vannest, Davis, & Patience, 2014). This implies error-free statistical procedures and that raters cannot be more efficient than statistical analyses. Both assumptions are highly problematic.

We examined the reliability (intra- and inter-rater) and judgment correctness (power and type-I error probability) of visual inspections by means of naturalistic, though simulated, data based on a piecewise regression model (Huitema & McKean, 2000). Furthermore, we aimed to identify the influence of a trend effect on judgment correctness and reliability. We expect that, when no trend is present, visual analysis yields high power and low type-I error rates – comparable to the results of regression-based analyses. Moreover, we expect a high consistency of judgments between raters and low uncertainty within each rater. In the presence of a trend, however, we expect an increase in type-I error-rates and a decrease in reliability.
Participant Information

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