

Slide 1

Leading education and social research Institute of Education University of London

The impact of oral language skills on the production of written text: atypical and typical development

Julie Dockrell
www.ioe.ac.uk
XVIII CONGRESSO NAZIONALE AIRIPA La Spezia

Psychology & Human Development

Slide 2

Leading education and social research Institute of Education University of London

Overview of presentation

BACKGROUND

1. Is writing a specific developmental challenge?
 - » Long term impacts of writing difficulties
 - » Teachers' knowledge and understanding
2. How we should we move forward to meet the children's needs?

Focus

1. **Children with Specific language difficulties and problems with writing**
2. Describe the writing skills of a cohort of children with a history of specific language impairment over time and up to the end of compulsory education (age 16)
- 2 3. Describe the ways in which language, literacy and processing limitations are related to writing

Slide 3


Leading education and social research Institute of Education University of London

Is writing a specific developmental challenge?

a) extent of problems with text production
b) nature of problems with text production

Slide 4

Extent of problems with text production



An inability to produce sustained, accurate, and competent writing has been identified as a pervasive weakness for many children.

Population based retrospective study USA:
incidence rates of written-language disorder 6.9% to 14.7%
Boys were 2 to 3 times more likely to be affected than girls (Katusic, 2009).


US National Assessment of Educational Progress

- a significant proportion of fourth graders (16 percent) were below basic achievement levels
- 60 percent had only partial mastery of the writing process.

The most recent published figures illustrated a similar pattern in England (37%)

Difficulties are more pervasive when children have additional learning needs

Slide 5




Problems in the production of written text are arguably the most prevalent developmental disability of communication skills (Lerner, 1976 cited in Hooper et al., 2002)

5


Slide 6

Nature of problems with text production




1. The product – what we see
 - Children with learning difficulties produce shorter, less interesting and poorly organized text at both the sentence and paragraph level (Hooper et al, 2002).
 - Texts marred by inordinate numbers of mechanical and grammatical errors (Anderson, 1982; MacArthur and Graham, 1987).
 - Handwriting is less legible and the texts poorly punctuated (Graham and Weintraub, 1996).
 - Texts produced are restricted to knowledge-telling rather than knowledge transforming
2. The processes children engage in
 - Little planning and revising (Troia and Maddox, 2004).
 - Even when specific strategies are taught, the maintenance and transfer of strategies can be a problem (Troia and Maddox, 2004).

Slide 10



Teachers' knowledge and needs

Slide 11



Teacher knowledge and needs

Teachers report being inadequately prepared to teach writing for children with learning difficulties; with little support for making adaptations (Graham, Murphy et al., 2008)


Considerable variation in the time teachers allocate to writing /writing instruction (Cutler & Graham, 2008)

Emphasis placed on teaching grammar although little evidence to its efficacy (Graham & Perrin, 2007)

Limited handwriting instruction (Barnett et al, 2006; Graham et al, 2008)

11


Slide 12



How we should we move forward to meet the children's needs?

Slide 13

Premises




1. Significant minority of children struggle to acquire basic competence in text production
2. Majority of children with writing difficulties are in mainstream classes
3. Identify what happens for specific groups of children can enhance performance and support teachers

13

Slide 14


Therefore



- ✓ Requires an understanding of the writing difficulties experienced
- ✓ Analysis of both product and process
- ✓ Understanding of problems should drive evidence based practice


14

Slide 15




Children with specific language difficulties and associated difficulties with the production of written text

Slide 16

 Leading education and social research
Institute of Education
University of London

Why might written text production be related to oral language competence?

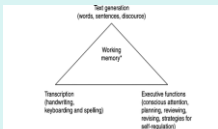
Slide 17

 Leading education and social research
Institute of Education
University of London

Oral language and the production of written text


Oral language skills are not explicitly identified in developmental models of writing

- The simple view of writing highlights three key processes (Berninger et al., 2002; Berninger and Amtmann, 2003)
- Transcription
- Planning...
- Working memory
- ?text generation
 - Vocabulary
 - Syntax
 - Pragmatics



Note: *Activates long term memory during composing and short term memory during reviewing.

Slide 18

 Leading education and social research
Institute of Education
University of London

Background – BUT
the production of written text and oral language (1)

- Oral language competencies and verbal reasoning contribute to composition fluency (Abbott and Berninger, 1993)
- Poor oral language skills are associated with difficulties in the fluency of producing words and clauses in text and reduced compositional quality (Berninger and Fuller, 1992; Berninger, Yates, et al., 1992)
- Morphological development, (inflectional and derivational) key role in the development of children's written language (Green, et al, 2003)
- Identification of the key dimensions of oral language which underpin writing limited and under theorized (Shanahan, 2006)

Slide 22

The boy is playing with his toy.
The boy is ising on the table.
The boy is 5ys old.
The boy is playing with old toys.
The boy like football.

The slide shows four handwritten examples of the text above. The first example is 'The boy is playing with his toy'. The second is 'The boy is ising on the table'. The third is 'The boy is 5ys old'. The fourth is 'The boy is playing with old toys'. The fifth is 'The boy like football'. There are four callouts: 'A lot of functional morphology' pointing to 'with', 'Limited vocabulary' pointing to 'old', 'Simple sentences structure' pointing to the overall sentence structure, and 'No punctuation' pointing to the lack of punctuation.

Leading education and social research
Institute of Education
University of London

Slide 23

Background- Language Difficulties

Specific Language Impairment defining criteria

- Specific problems or disorders in comprehending or producing speech and a delayed learning of language.
- Occur in the absence of any organic, social or cognitive causes.
- Criteria for this diagnosis focuses on:
 - Performance on a language test which is below the child's chronological age
 - Discrepancy between the child's language skills and their non-verbal abilities

Problems associated with

- Lexicon
- Grammar
- Phonology
- Processing capacity

Leading education and social research
Institute of Education
University of London


Slide 24

- Variety of terms used
 - High prevalence rates at school entry 7.4 %
- Difficulties not confined to oral language
 - Reading decoding
 - Reading comprehension
 - Spelling
- Production of written text beyond the single word level ?
 - Few studies
 - Lack of evidence based intervention strategies
- THESE CHILDREN PROVIDE A GOOD TEST GROUND FOR THE LINKS BETWEEN ORAL LANGUAGE AND WRITING PERFORMANCE

Leading education and social research
Institute of Education
University of London

Slide 25

Children with SLI writing – predictions?




High cognitive demands overload a language system reduced in processing efficiency

- Reduced length of texts
- Higher levels of errors

Reduced vocabulary knowledge

- Content of writing

Slide 26




Morphological & Syntactic problems

- High levels of grammatical errors
- Immature sentence constructions
- Reduced ability to express semantic content

Phonological difficulties

- Spelling errors
- Indirectly through reduced levels of reading

Slide 27




Studies of writing in these populations need to consider measures related to

- Processing capacity
- Written code
 - Phonological processing
 - Reading
 - Spelling
- Oral language
 - Grammar
 - Morphology
 - Vocabulary

Slide 31

Study




Wider longitudinal study of children with specific language difficulties

- N=69
- Initially identified at age 8
- Now 18
- Data on production of written text collected at 4 time points

Slide 32

Measures



Age appropriate


Tap

- Language
 - » Receptive and expressive
- Literacy
 - » Reading decoding
 - » Reading comprehension
 - » Spelling
- Non-verbal ability and processing
- Writing fluency

Examined in relationship to level of written language

Slide 33

Level of written language



Wechsler Objective Language Dimensions (The Psychological corporation 1996).
Assessment of children 6-16 years


Writing sub-test
descriptive writing in response to a verbal prompt.
Each child is allowed to write for 15 minutes

Scoring

Analytic scoring-

- Ideas and development
- Organisation and unity
- Vocabulary
- Sentence structure
- Grammar and usage
- Capitalisation and punctuation

Slide 40


 Leading education and social research Institute of Education University of London

Describe the ways in which language, literacy and processing limitations are related to writing skills

- a) Concurrently
- b) Over time.

Slide 41

Predicting WOLD performance at 16

 Leading education and social research Institute of Education University of London

Control for developmental factors

- Non-verbal ability at 14 first

Autoregressor


- WOLD at 14.

A significant model emerged accounting for 60% of the variance.

- Age 14 WOLD (autoregressor)
- **Receptive Oral vocabulary**
- **Spelling**

Slide 42

Productivity

 Leading education and social research Institute of Education University of London

Fluency


- Mean rate of 53.75(SD = 27.61) letters a minute, equivalent to that of children aged between 8 and 9
- Positively correlated
 - WOLD standard score
 - Total number of words produced
 - Reading, spelling and non-verbal ability at 14

Words produced

- 86 words
 - Significant improvement on productivity from age 11 (X=56)
- Positively correlated
 - WOLD standard score
 - Receptive vocabulary, Reading, spelling and non-verbal ability at 14

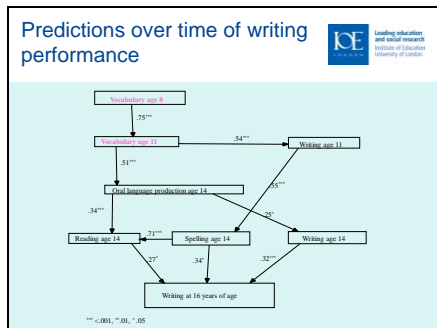
Slide 43

Predicting fluency and words produced at 16 years




- Fluency-speed of writing letters**
 - Predictors spelling and non-verbal ability
- Numbers of words produced**
 - Predictor spelling

Slide 44



Slide 45


Conclusions from longitudinal study



- Text production underpinned by**
 - Code
 - Fluency
 - Vocabulary
- Long term effect on writing performance**
 - Continuity in model from 11- 16
- Continued importance of literacy and language in text production at school leaving**

Slide 46


Vocabulary is important?



- Lexical diversity factor in the performance of children with language difficulties (Scott & Windsor, 2000)
- Semantic aspects of oral language associated with writing for children with language difficulties (Bishop & Clarkson, 2003)

Slide 47

Why might vocabulary support written text production? – Direct evidence




- Many cognitive components of oral language generation are shared with text generation including
 - the selection of the relevant content,
 - lexical retrieval
 - syntactic formulation (McCutchen et al., 1994)
- Arguably a key element of idea generation is the selection in the mental lexicon to of the appropriate target words (Negro & Chanquoy, 2005)
- Computational principles identify lexical quality as a key dimension combining orthographic, phonological and semantic features (Reichle & Perletti, 2003)

Analyses of text generation argue for an examination of the relationships between vocabulary & writing

Slide 48

Why might vocabulary support written text production? - Indirect evidence




- Word knowledge linked to reading comprehension
 - Important for text generation
- Both breadth and depth/fluency of vocabulary knowledge linked to reading comprehension (Tannenbaum, Torgeson & Wagner, 2006)
- Receptive vocabulary breadth also predicts reading decoding & expressive vocabulary breadth visual word recognition (Ouellette, 2006)

Links between reading and writing argue for an examination of the relationships between vocabulary & writing

Slide 49


Vocabulary?



- Do we get similar patterns of performance for children who have the same vocabulary levels or
- Are we missing some other key cognitive factors?
- Preliminary evidence suggests vocabulary is important but may be developmentally specific

Slide 50

Conclusions




Difficulties with the non-phonological dimensions of language impact on the production of written text

- For children with language difficulties
 - Vocabulary diversity a building block for text generation
 - Language impairment 'extends' the direct role of word level factors

Slide 51

Implications for intervention



- Vocabulary development
 - To support idea generation
- Amenable to instruction
- Explicit instruction of target words
 - Extended exposure to develop both depth and breadth of representations

Slide 52

	
<p>Thank-you for listening</p> <p>Any questions?</p>	
<p>Thanks to Collaborators- Geoff Lindsay & Vince Connelly Funders-ESRC, DCSF</p>	<p>Institute of Education University of London 29 Bedford Way London WC1H 0AL Tel +44 (0)20 7612 6297 Fax +44 (0)20 7612 6120 Email j.dockrell@ioe.ac.uk</p>
