

中文读写能力及其相关因素研究*

孟祥芝 周晓林 孔瑞芬

(北京大学心理学系,北京,100871)

摘要 使用5点量表,本研究在北京地区调查了2187名小学一、三、五年级儿童的中文读写能力及其相关因素。因素分析抽取了8个因素:书面语意义理解、基本知觉能力、书写技能、家庭阅读背景、动作技能、口语能力、朗读和听写、书面表达。对上述因素进行多元逐步回归分析发现,各种读写能力内部相关显著。基本知觉能力、口语能力、家庭阅读背景和动作技能分别对中文读写能力的不同成分有显著解释作用。这个结果对于理解阅读能力发展及其与家庭阅读背景、口语、基本知觉-动作能力之间的关系,以及阅读障碍的内在机制具有重要的理论意义。

关键词: 阅读和书写 口语能力 动作技能 基本知觉能力 书面语意义理解

1 前言

阅读作为一种高级的认知过程,受基本知觉加工过程的制约。近期有些研究表明,词汇识别中的语音和正字法加工技能受基本听觉和视知觉能力的制约。Talcott等人^[1]研究发现,儿童对动态听觉和视觉刺激的敏感性与他们的文字技能有关。而且,当控制了智力和一般阅读能力,运动视觉敏度能够独立解释字形技能上的差异,不能解释语音技能上的差异;听觉调频敏度与语音能力共变,而不与字形技能共变。这些结果说明:觉察动态刺激的敏感程度影响儿童的阅读技能,视觉与听觉可能单独影响阅读过程中提取字形和语音信息的能力。

在发展性阅读障碍研究中存在两种理论争论。一种观点认为阅读障碍是语言的表征和加工上的障碍,阅读障碍发生在语言学层次。另一种观点认为阅读障碍与基本视听知觉加工能力缺陷有关,这种观点得到许多研究结果的支持,说明了阅读加工可能受基本知觉能力的制约。

国内对阅读和阅读发展的研究较多地集中在阅读内在特性的研究上,如形音义的加工过程,理解、产生和词汇识别的内在机制。对儿童读写能力获得和发展的相关因素,如口语水平、家庭阅读背景以及基本知觉、动作技能与阅读之间关系的研究还非常少见^[2]。少数研究者^[3-8]关心视觉、听觉加工能力在阅读障碍中所起的作用,但尚缺少对正常阅读获得与发展过程中各种不同层次因素之间关系的系统

认识。本研究就是尝试弥补空缺,运用问卷调查方法,试图探讨以下问题:汉语儿童读写能力及其相关因素的结构模式;中文读写能力及其相关因素之间的关系。

2 研究方法

2.1 调查问卷

在已有调查问卷^[9]基础上,我们根据中文读写加工特点及其影响因素,增加和补充了有关视听知觉加工、动作技能、口语技能等项目,最后形成一个包含50个题目的家长问卷。问卷为负向5点量表,即每个条目都陈述了某种负面行为,如“听写中同音字混淆严重”。要求被调查家长在五点量表上评定所描述现象在儿童中出现的频率,“从未出现”评定为“1”,“经常出现”评定为“5”。

2.2 调查对象

本研究在北京市不同教学区中随机选取了7所小学,调查对象是一、三、五年级学生,问卷由家长填写。共发放问卷2421份,回收2230份。对问卷填写情况进行整理,有43份问卷未填写题目率超过50%,作为无效问卷处理,最后进入统计分析的有效问卷2187份,占所发问卷的90%。

3 结果

3.1 量表因素分析结果

对整个量表的全部项目进行探索性因素分析。假设所得因素之间可能存在相关,因此采用极大似

* 本研究得到国家攀登计划(批准号:95-专-09)、国家自然科学基金(30070259,30070260)、教育部科学技术重点项目(01002)、人文社会科学重点研究基地重大项目基金、青年基金(01JAXLX015)的资助。

然法(Maximum likelihood)抽取8因素,用斜交旋转这8个因素所包含的项目、因素负荷及因素名称见方法(Oblimin with Kaiser Normalization)加以旋转。表1。

表1 汉语儿童中文读写能力及其相关因素分析

	因素负荷							
	1	2	3	4	5	6	7	8
因素1 意义理解 (特征值 = 17.68,解释方差的 38.44%)								
37 常常不理解书面词汇的意思。	0.51							
29 常常不理解字在词中的意思	0.50							
19 常常不理解词在句子中的意思。	0.41							
18 常常不知道学过的字是什么意思。	0.40							
因素2 基本知觉能力 (特征值 = 2.26,解释方差的 4.91%)								
33 分不清汉字的声调。		0.51						
36 常常把数字或汉字写反。		0.48						
16 儿童存在严重的书写上的困难。		0.44						
32 儿童存在严重的阅读上的困难。		0.43						
45 读书时常常有看不清楚,或者所看的字有颤抖和闪烁的感觉		0.38						
41 不能熟练使用汉语拼音。		0.34					0.32	
39 儿童在很小的时候就手脚笨拙,走路不稳。		0.34						
47 儿童出生时有脑部受损或难产现象。		0.33						
42 经常混淆一个词中两个字的先后顺序。		0.33						
因素3 书写技能 (特征值 = 1.54,解释方差的 3.36%)								
43 写字字迹非常潦草,笔画不清晰,难以辨认。			0.85					
46 写字、画画都笔画不均匀,歪歪扭扭。			0.77					
44 做事情经常丢三拉四,毫无条理。			0.49					
40 注意力不集中。			0.37					
9 抄写速度慢,而且总是抄错。			0.32					
因素4 家庭阅读背景 (特征值 = 1.36,解释方差的 2.96%)								
34 爸爸不经常看书。				0.65				
21 父母和亲戚中也有人语文不好。				0.65				
30 妈妈不经常看书。				0.53				
48 其他家庭成员如父母、祖父母、叔叔、姑姑、表兄妹、堂兄妹也有阅读、语言或书写问题。				0.34	0.44			
因素5 动作技能 (特征值 = 1.22,解释方差的 3.67%)								
25 很不擅长球类运动。					- 0.33			
6 在跳绳、走单杠等运动中很难保持平衡。					- 0.31			
因素6 口语能力 (特征值 = 1.1,解释方差的 2.39%)								
20 孩子在家里用口头语言与父母交流有困难。						0.66		
23 口头表达自己的意思很困难。						0.58		
12 有时听不懂别人对自己说的话。						0.50		
35 孩子在家里理解父母的指令存在困难。						0.47		
26 掌握事物的顺序很困难如公式、乘法口诀。						0.31		
24 读完一篇文章常常不知道说的什么意思。						0.31		
因素7 朗读与听写 (特征值 = 1.05,解释方差的 2.28%)								
2 听写中同音字混淆严重。							0.58	
1 经常忘记一个学过的字应该怎样写。							0.56	
10 听写时总做的不好。							0.45	
3 读一篇文章需要的时间比别人长。							0.40	
22 朗读课文时总是丢字、改字、串行。							0.35	
31 读字和写字时经常混淆形状相似的字。							0.34	

因素负荷

因素 8 书面表达 (特征值 = 0.96, 解释方差的 2.09%)

	1	2	3	4	5	6	7	8
5 不会写作文。								0.72
7 书面表达自己的意思非常困难。								0.66
38 不会使用书面词汇,如不会读、不会在作文中使用。	0.34							0.46

3.2 量表的信度

为了判断该因素结构的信度,对每个因素进行了分量表-总分相关、克伦巴赫系数的计算,结果见表2。总量表的系数为0.96,说明量表具有较高的内部一致性信度。

表2 分量表-总分相关及系数

分量表	分量表-总分相关	系数
意义理解	0.84**	0.89
基本知觉能力	0.86**	0.86
书写技能	0.79**	0.82
家庭阅读背景	0.76**	0.72
动作技能	0.57**	0.54
口语能力	0.89**	0.87
朗读与听写	0.85**	0.86
书面表达	0.74**	0.80

3.3 读写能力及其相关因素的回归分析

分别以读写能力(因素1、3、7、8)作为因变量,对上述因素之间的关系进行了多元逐步回归分析。结果分别见表3、表4、表5、表6。综合回归分析结果,口语能力对意义理解、书写技能、朗读和听写有显著的解释作用。家庭阅读背景对意义理解和书面表达有显著的解释作用。基本知觉能力对意义理解、书写技能和朗读与听写有显著的解释作用。动作技能只对书写技能有显著的解释作用。这些结果说明口语能力、家庭阅读背景、基本知觉能力和动作技能分别作用于中文读写能力的某些亚成分,对读写能力的获得与发展具有重要意义。

为了更直观地看到中文读写能力与其影响因素之间的关系,我们以朗读与听写及其与基本知觉能力,意义理解与口语能力为例子绘制了散点图(见图1、图2),从图中可以看出朗读和听写与基本知觉加工能力,意义理解与口语能力具有较高的共变性。

表3 以意义理解为因变量的回归分析

因变量	解释变量	B	t	p	
意义理解	朗读与听写	0.19	0.26	11.94	0.00
	口语能力	0.14	0.24	9.93	0.00
	书面表达	0.33	0.27	14.31	0.00
	家庭阅读背景	0.15	0.17	9.17	0.00
	基本知觉能力	0.03	0.05	2.23	0.03

表4 以书写技能为因变量的回归分析

因变量	解释变量	B	t	p	
书写技能	朗读与听写	0.25	0.29	10.45	0.00
	口语能力	0.10	0.15	4.75	0.00
	书面表达	0.28	0.19	7.86	0.00
	基本知觉能力	0.10	0.13	4.62	0.00
	动作技能	0.10	0.06	2.89	0.00
	意义理解	0.08	0.07	2.26	0.02

表5 以朗读与听写为因变量的回归分析

因变量	解释变量	B	t	p	
朗读与听写	意义理解	0.38	0.27	11.14	0.00
	书写技能	0.24	0.21	10.38	0.00
	基本知觉能力	0.17	0.20	8.25	0.00
	书面表达	0.24	0.15	6.88	0.00
	口语能力	0.10	0.13	4.89	0.00
	家庭阅读背景	0.07	0.10	4.68	0.00

表6 以书面表达为因变量的回归分析

因变量	解释变量	B	t	p	
书面表达	意义理解	0.32	0.39	14.68	0.00
	书写技能	0.12	0.18	7.86	0.00
	朗读与听写	0.11	0.19	7.21	0.00
	家庭阅读背景	0.07	0.10	4.68	0.00
	基本知觉能力	0.03	0.05	2.23	0.03
	动作技能	0.03	0.05	2.23	0.03

4 讨论

4.1 读写能力及其影响因素的结构及因素涵义

本研究通过问卷调查和因素分析获得了八个因素。在这八个因素中,书面语意义理解、书写技能、朗读和听写、书面表达四个因素是中文读写能力的亚成分,基本知觉能力、家庭阅读背景、动作技能和口语能力是中文读写能力的影响因素。信度分析表明,该因素结构的项目之间具有较高的内部一致性。

八种因素主要含义的分析与描述如下:书面语意义理解主要指对文字意义的理解,包括字、词、段落、篇章等不同层次意义的获得与加工能力。书写技能指书写流畅性、可辨认性,即书写行为的速度和质量。书写技能的高低反映了儿童书面表达的流畅性、注意力的专注水平以及书写动作的灵活程度。朗读与听写主要指文字的认识和产生,朗读和听写水平的高低反映了儿童对汉字形、音、义的加工水平,是中文读写能力的基本成分。阅读障碍研究^[11]表明,汉语儿童的阅读障碍主要表现为汉字水平形

音义加工效能低。书面表达主要指书面语使用和输出,书面表达能力的高低是儿童意义加工、书面词汇量和书写技能的综合表现。

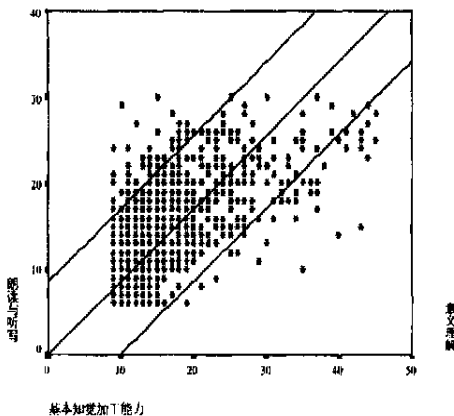


图1 阅读与听写及其与基本知觉加工能力散点图

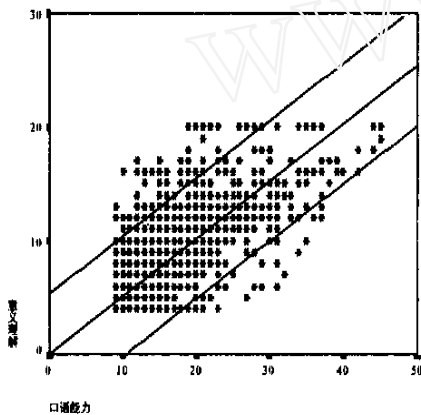


图2 意义理解与口语能力散点图

基本知觉能力包括儿童视听知觉加工能力和早期大脑发育、动作协调情况。从因素抽取情况看,“儿童有严重的阅读问题”和“儿童有严重的书写问题”也归入了这个因素中,这或许反映了严重的阅读和书写问题与知觉加工和早期发育状况有某种内在的联系。这还需要进一步讨论和探讨。家庭阅读背景包括父母的阅读习惯及家庭成员的阅读水平。拼音文字发展性阅读障碍研究^[2]显示,阅读障碍有一定的遗传机制。本研究发现家庭阅读背景对书面语意义理解和书面表达有显著解释作用。但本研究的家庭阅读背景包括环境和家族阅读能力两重因素,没有具体区分环境和遗传的独立作用。动作技能指基本动作能力,在本研究中只包括了粗大动作能力。尽管动作技能在该量表中的系数最低,回归分析依然发现它与书写技能有关。如果项目中包含精细动作技能,动作技能对书写技能的解释作用可能会更大。口语能力包括口语理解和口语表达。研究^[10]发现,口语为儿童正确理解书面词汇提供了意

义基础。本研究也发现口语能力与中文读写能力显著相关。

4.2 中文读写能力及其影响因素之间的关系

本研究通过因素分析得到的四种中文读写能力之间存在显著相关,说明书面语意义理解、书写技能、朗读和听写、书面表达有共变的成分。这些过程都涉及中文书面字词形状的辨认与产生、语音的译码和意义通达及整合,是对书面文字形、音、义的识别和产生过程,而字词形音义的加工是相互依存的。从这四种能力所包含的主要加工过程和它们与影响因素之间的关系看,这四者之间又具有相对独立性。书面语意义理解侧重于字、词、句、篇章意义的通达及整合。书写技能主要指书写输出的质量和速度,侧重于书写动作过程。朗读和听写涉及汉字形音义的加工过程,朗读主要侧重从字形识别到语音译码,听写过程则是从音义加工激活字形表征的过程。书面表达主要指书面产品的产生,主要是从意义加工到书面输出的过程。正因为这四种能力既相互关联又相对独立,它们与影响因素之间也构成了不同的关系模式。

本研究中的四种影响因素分别作用于读写能力的不同侧面。口语能力和基本知觉加工能力对书面语意义理解、朗读和听写,书写技能有显著解释作用。一方面说明正常口语能力和知觉加工能力是上述几种能力发展的必备基础,另一方面也说明口语能力和知觉加工能力可能存在某种内在联系,当控制二者中的任何一个进行偏相关分析时,另一个变量与上述四种能力的相关都会减弱。家庭阅读背景主要影响意义理解和书面表达,这可能与家庭提供的阅读氛围和创造的阅读机会有关^[11]。动作技能对书写技能有显著影响,说明书写技能中包含基本的动作加工。研究^[12,13]发现发展性动作协调障碍与儿童的书写障碍有关。

5 参考文献

- 1 Talcott JB, Witton C, McClean M, et al. Dynamic sensory sensitivity and children's word decoding skills. *Proceedings of the national academy of sciences of the united states of America*, 2000; 97: 2952-2957
- 2 孟祥芝,周晓林,曾颺,孔瑞芬. 动态视觉加工与儿童汉字阅读. *心理学报*, 2002; 34(1): 16-22
- 3 洪慧芳,曾志朗. 文字组合规则与汉语阅读障碍 - 对汉语阅读障碍学童的一项追踪研究. 1995; 台湾中正大学心理研究所硕士论文

(转第 572 页)

程的突变期平均斜率相对于其振荡渐进期平均斜率的倍数有递次增加的趋势,即其突变期的跨度随概念的抽象程度提高而越来越大;而成人没有明显递次增加的趋势。

4.2.3 原因分析

为什么成人与中学生在振荡渐进期的绝大多数阶段都表现出显著的或极显著的差异呢?成人在学习科学概念之前已经或多或少具有一些相关背景信息,他们学习时并不完全是毫无目的地“试误”,因此,总体来说,其振荡渐进期多表现为持续上攻,且高原期出现较晚。中学生在学习陌生科学概念时,由于知识范围、相关背景信息和认知策略水平的局限性,科学概念学习困难较大,经过漫长而缓慢“试误”、知识积累和方法探索过程后才可能逐步形成科学概念,因此,振荡渐进期往往开始下行然后上攻,振荡特征比较明显,且高原期出现较早。

由于科学概念本身的复杂性和抽象性,加之成人的各种经验、思维定势和“功能固着”习惯的影响,科学概念形成到一定程度后会出现较长的停滞不前的情况——高原期。虽然这一高原期出现较晚,但持续较长。中学生经过漫长而缓慢“试误”、知识积累和方法探索,虽然能对科学概念有一定了解和认识,但仍然会出现高原期。由于中学生较少思维定

势和“功能固着”的习惯,使得高原期持续较短。这说明中学生更适合学习科学概念。

因为科学概念的最终形成是学习者自己完成的,因此,成人与中学生科学概念学习过程对应曲线都有一段以较快的速度急剧上升呈突变式的过程。这说明科学概念学习是一个自组织活动。

5 参考文献

- 1 Bouthilet L. The Measurement of Intuitive Thinking. 1948. 参见文献 7
- 2 同 1
- 3 Bourne L. E. et al. Cognitive Processes. Englewood Cliffs: Prentice Hall, 1979.
- 4 Bruner J. S. et al. A Study of Thinking. New York: Wiley and Sons. 1956.
- 5 Bower G. H. et al. Reversals prior to solution in concept identification. Journal of Experimental Psychology 1963;66:409 - 418.
- 6 Levine M. A. A Cognitive Theory of Learning. Hillsdale: Lawrence Erlbaum Associates 1975.
- 7 杨治良. 概念形成渐进——突变过程的实验性探索. 心理学报, 1986;18:380—387
- 8 毋小勇、张莉华. 一个科学概念形成过程初步实验研究. 心理科学, 2000;23:620—621

(接第 547 页)

- 4 谢文铃,黄秀霜. 阅读障碍儿童与普通儿童在视觉辨识、视觉记忆与国语文成就之比较研究. 特殊教育学报, 1997;12:321 - 337
- 5 Ho C, Lai D. Naming-speed deficits and phonological memory deficits in Chinese developmental dyslexia. Learning and Individual Differences, 1999;11:173-186
- 6 Hu C F, Catts H W. The role of phonological processing in early reading ability: What we can learn from Chinese. Scientific Studies of Reading, 1998;2(1):55-79
- 7 孟祥芝,周晓林,曾飏. 发展性阅读障碍与知觉加工. 心理学报, 2002;34(4):
- 8 周晓林,孟祥芝. 中文发展性阅读障碍研究. 应用心理学, 2001;1:25 - 30
- 9 舒华,孟祥芝. 汉语儿童阅读困难初探 - 来自阅读困难儿童的统计数据. 语言文字应用, 2000;3:63 - 69
- 10 Meng, X., Shu, H. & Lai, A Study on Chinese developmental dyslexia - comparison between Putonghua and Cantonese. Unpublished manuscript
- 11 舒华,李玲等. 家庭文化背景在儿童阅读发展中的作用. 心理科学, 2002;25(2):136 - 139
- 12 孟祥芝,周晓林. 认识发展性协调障碍. 中国心理卫生杂志, 2002;8:558 - 562
- 13 孟祥芝,周晓林,孔瑞芬,吴佳音. 发展性协调障碍与书写困难个案研究. 心理学报, 2002, (接受)

OF "THEORY - OF - MIND" - THE POTENTIAL COHERENCE AND THE TASK - SPECIFICITY OF PRESCHOOLERS' PERFORMANCE IN VARIOUS TOM TASKS

Deng Ciping , Sang Biao , Miao Xiaochun

(Department of Psychology, East China Normal University)

The general developmental trend of young Chinese children's "theory of mind" (ToM) was investigated in this study. Ninety 3 - 5 - year - olds were chosen as the subjects, and their performance in four types of ToM tasks was tested and compared. The results showed that: 1) during 3 to 5 years of age, young children's ToM developed rapidly; 2) there was some potential coherence of performance in those four tasks, which might imply that there was some common substrate underlying young children's performance in various ToM tasks; 3) on the other hand, there was great difference of young children's performance in various ToM tasks, which might suggest that their performance was evidently task - specific.

Key Words: preschooler, theory of mind, general cognitive base, task - specificity.

MORE ON THE CONTRIBUTIONS OF CONSCIOUSNESS AND UNCONSCIOUSNESS TO RECOGNITION: ANTI - AGING OF IMPLICIT MEMORY

Guo Xiuyan

(Psychology Department, East China Normal University)

The present experiment explored the contributions of consciousness and unconsciousness, which were made by inclusion and exclusion tests of PDP. It included two independent variables: age (middle - aged and old) and material (linguistic and nonlinguistic). There were 23 subjects. The results were: 1) the effect of consciousness greatly varied with age and material; 2) the effect of unconsciousness evidently varied with the linguistic material; 3) the effect of unconsciousness was not significant in nonlinguistic material or different ages. Therefore, we conclude that the contributions of unconsciousness to old people's memory don't decline, which indicates their implicit memory does not seem to be aging.

Key Words: recognition, consciousness, unconsciousness, implicit memory.

A STUDY OF THE RELATIONSHIP BETWEEN THE INNOVATIVE DIATHESSES AND MENTAL HEALTH OF SECONDARY SCHOOL STUDENTS

Wang Jisheng , Ding Xinhua

(Institute of Psychology, Chinese Academy of Sciences)

To explore the relationship between the innovative diatheses and mental health of secondary school students, Innovative Diatheses Scale and Chinese Secondary School Students' Mental Health Scale, were administered to 558 secondary school students. The results revealed that: 1) Innovative Diatheses Scale included three subscales, that is, innovative consciousness, innovative competence, competitiveness, which had already been proved of good reliability and validity; 2) The level of secondary school students' innovative diatheses was a little higher than the mean level on the whole; 3) Secondary school students' innovative diatheses were significantly related to their

mental health, that is, innovative consciousness was negatively related to over - loaded studying, depression and anxiety; innovative competence was negatively related to overloaded studying and depression; while it was positively correlated to maladjustment, competitiveness was negatively related to overloaded studying, depression, anxiety and the average level of general mental health. Those who had good mental health would possess higher level of innovative diatheses than those who had poor mental health. Stepwise regression analysis revealed that overloaded studying was a significant predictor of innovative consciousness and competitiveness; overloaded studying, maladjustment and depression were significant predictors of innovative competence.

Key Words: innovative diatheses, innovative consciousness, innovative competence, competitiveness. Mental health.

A NEW VIEWPOINT ON INTELLIGENCE: A CRITICAL INTRODUCTION OF CECI'S BIOECOLOGICAL MODEL OF INTELLIGENCE

Ding Fang

(Shandong Institute of Education)

Li Qiwei

(Department of Psychology, East China Normal University)

Xiong Zhehong

(Department of Psychology, Central China Normal University)

Stephen J. Ceci, an American psychological professor, proposed the information - processing - oriented Bio - ecological Model of Intelligence which was based on criticizing the traditional psychometric models in 1990. The bio - ecological model contains four assumptions, namely, a) intelligence is viewed as a multiple resource system, b) from the very beginning of life there is an interplay between biological potentials and environmental forces, c) "proximal processes" are the engines of intellectual development, d) the role of motivation in determining how much is one's context aids the actualization of one's potential. This model gives us a new perspective for revealing the nature of human's intelligence.

Key Words: Bio - Ecological Model of Intelligence, cognitive potential, context, knowledge, proximal processes.

FACTORS INFLUENCING CHINESE SCHOOL CHILDREN'S READING ABILITY: EVIDENCE FROM A PARENTAL QUESTIONNAIRE SURVEY

Meng Xiangzhi , Zhou Xiaolin , Kong Ruifen

(The Research Center of Psychology and Behavior, Tianjin Normal University, and Department of Psychology, Beijing University)

Using a five - point questionnaire, this study surveyed 2187 parents of school children in Beijing and asked them to report their children's cognitive performance in reading. Factor analysis extracted 8 influencing factors: written language comprehension, basic perception, handwriting skill, family reading background, motor skill, spoken language expression and comprehension, reading and dictation, text writing. Regression analysis found that there were significant correlations between components of reading and writing skills. Basic perceptual pro-

cessing ability, spoken language expression and comprehension, family reading background, and motor skill could account significantly for different components of children's reading and writing ability. These results provided important insight into the relations between basic perceptual ability and reading development and into the mechanisms underlying developmental dyslexia.

Key Words: reading and writing, spoken language ability, motor skill, basic perceptual processing, print comprehension.

THE ROLE OF PINYIN IN CHINESE CHILDREN'S SHARED BOOK READING

Wu Xinchun, Li Hong, Shu Hua

(Department of Psychology, Beijing Normal University)

Richard C. Anderson, Li Wenling

(Center for the Study of Reading, University of Illinois at Urbana - Champaign, USA)

Using instructional experiments in the classroom, the present study investigated the role of pinyin in Chinese children's shared book reading. The results indicated that: 1) Shared book reading was an ideal method for young children's reading instruction in Chinese elementary schools; 2) The relationship of characters and pinyin in shared books played an important role in children's learning. Partial pinyin was not advantageous to children's learning; 3) Incidental learning in shared book reading was beneficial to all the children. Children's ability level was higher; the probability of incidental learning was greater. 4) The influences of the relationship of the character and pinyin varied with students ability levels. Partial pinyin was especially disadvantageous to poor students.

Key Words: shared book reading, incidental learning, pinyin.

ON THE CHARACTERISTICS AND METHODS OF RESEARCHES ON SPECIAL CHILDREN PSYCHOLOGY

Du Xiaoxin

(Department of Special Education, East China Normal University)

On the basis of reference materials from abroad and the author's own researches, this paper comes up with the essential characteristics of special children psychology, and introduces some relative research methods. It also discusses the methodology of the qualitative research and the single subject research commonly used in the research of special children psychology.

Key Words: the research method of special children psychology, qualitative research, single subject research.

IMPLICIT MEMORY FOR MORAL - RELATED WORDS: A DEVELOPMENTAL STUDY

Gao Xiangping, Xu Yuan, Li Ping

(Shanghai Teachers' University)

With the PDP schedule design, the implicit and explicit memory task scores of different age groups (primary, middle school and college students) in moral, immoral and neutral words were compared separately. The results showed: 1) Memory for bad words seemed more implicit; 2) Middle school students were passing a special stage or a turning period in their own moral development; 3) The implicit study of moral cogni-

tion should be a new perspective in moral development studies.

Key Words: moral cognition, implicit characteristics, development stage.

A STUDY OF BIAS IN NATURE COGNITION

Fan Qi

(Institute of Applied Psychology, Suzhou University)

This study inquired into bias in nature cognition by experiments in order to find out what influenced science learning. The findings were: 1) There was implicit science learning in bias in nature cognition. 2) The bias of nature cognition seemed very complex: the bias was sensitive to experience but not to age; 3) Sex - difference was remarkable: the function of social sex role made boy - students more self - confident and more active than girl - students, which suggested that people's bias in nature cognition was restricted by social influence; 4) The subjects in the condition of implicit learning were frank and curious; however, the ones in the condition of explicit learning were reserved and circumspect. Our main conclusions: We should create situations in which to stimulate students' implicit science learning, help students to enjoy their science curriculum and experience; and especially encourage girl - students to challenge science. This study contributes to both psychology and science education.

Key Words: bias in nature cognition, sex - difference, implicit science learning, social influence.

AN ANALYSIS OF THE IDEAL PERSONALITY - STRUCTURE OF SENIOR MIDDLE SCHOOL STUDENTS

Wang Zhenyong

(Educational Science Institute of Shenzhen)

Huang Xiting

(Psychology Department, Southwest China Normal University)

Zhi Fuhua

(Applied Psychology Institute, Suzhou University)

In this study, we investigated the ideal personality of 850 senior middle school students from 14 provinces and cities with the self - made self - rating scale of personality trait glossary. The findings were that the ideal personality traits of senior middle school students included thinking, agreeableness, hypocrisy (negative valence), in - extroversion and energy. School - girls had more negative attitudes than school - boys towards ugly personality traits.

Key Words: personality - structure, ideal personality, senior middle school student.

ACCESSING THE RETRIEVAL CAPABILITY OF VISUOSPATIAL WORKING MEMORY OF STUDENTS WITH LEARNING DISABILITIES

Zhang Ming, Sui Jie, Fang Weijun

(Psychology Department, Northeast Normal University)

Two visuospatial working memory tasks that had different processing load were designed. The present study accessed the retrieval capabilities of visuospatial working memory of students with learning disabilities by analyzing three indexes: working memory span, error rates in retrieval and retrieval speed, and compared students with learning disabilities with excellent students. The results showed: under the condition of both high and