

小学生课文图式意识、图式操作策略与图式行为关系的研究

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摘要 本研究采用课文分析法对松原市蒙来小学184名五年级学生进行了实验研究,探讨了课文图式意识、图式操作策略及图式行为之间的关系。结果发现,它们三者之间的关系既相互依赖,又存在差异。课文图式操作策略对图式行为的影响比图式意识对其影响要大。说明提高学生课文图式能力的主要途径是加强图式操作策略的训练和培养。

关键词: 课文 图式意识 操作 行为

1 引言

图式(Scheme)是一种有组织的知识结构,在静态和动态两个方面都具有其特征。静态的特征表述的是图式可以表征陈述性知识,动态的特征解释的是图式可以表征程序性知识(Rumelhart, 1980)^[1]。就前者而论,学者们探讨知识在人脑中的表征及其结构的系统性。就后者而言,他们更注重控制是怎样自动地从一个产生式转向另一个产生式,即如何实现知识的自动转化。知识若能有效地自动转化,就意味着程序性知识在工作记忆中盘占的空间很小,于是就可以为其它心理内容提供更多的资源。近年来,西方学者对图式的动、静态特征都进行了研究(Aderson & Pearson, 1984)^[2],结果表明,图式可以在各种抽象的水平上表征知识,被表征的知识一旦适合于当时的情景图式,它就会得到激活和驱动,被同化或吸收到已有的图式中,形成新的图式。图式的不断丰满和完整,使其从一个系统转向另一个系统成为可能,即实现知识的自动转化成为可能。这些结论不仅为人们了解知识在头脑中的组织和加工提供了参考,而且为进一步探索人类的潜能奠定了基础。

分析上述研究,我们发现学者们没有对个体图式行为是否受图式意识及图式操作的策略、难易程度和准备状态影响的问题进行研究。我们认为,作为个体的知识结构系统,其图式行为不是自发产生的,可能受图式意识、图式操作的策略等因素的影响。因此,本研究拟将图式意识及图式操作结合起来考察它们与图式行为的关系。为达到这一目的,我们选择了学生对课文的理解。Rumelhart (1977)^[3]曾指出,学生学习课文的过程是图式形成的认知过程,在此过程中,他们不仅要依据已有的课文图式去表征新图式,而且还必须充分地使用潜在的图式意识去判断、选择、接受和建构新图式,并且依据图式意识的引导去激活图式操作的策略、准备状态,促使理想的图式行为产生。为此,我们试图通过这个实验探讨小学生课文图式加工过程的制约因素,为提高学生课文图式能力开辟一条新途径。

2 研究方法

2.1 被试 将松原市蒙来小学五年级四个班的184名学生作为被试。男90人,女94人,年龄10

• 全国教育科学“九五”规划资助项目。参加该课题的人员还有廖凤林、孙树勇、暴占光、刘秀丽、张布和、高琨、张雪琴。

-12岁之间。

2.2 实验材料 根据专家、特级教师及部分语文教师的意见,结合我们多年的实验经验编制了一套课文图式测试题,其内容为图式意识、图式操作及图式行为。

2.2.1 图式意识测验 选用《微型电子计算机》一文。主试按文章内容结构将其整理成五种不同水平的图式。要求被试选择自认为是最佳的一种图式作为图式意识。最佳意识计4分,依次类推,无意识计0分。采用分半法计算出本测验分半信度系数 $r=0.075^{**}$ ($P<0.01$)。

2.2.2 图式操作测验 被试阅读《野菊花》一文后,测量其三种课文图式操作形式:图式操作策略、图式操作策略难易程度、图式操作策略准备状态。共15题,满分75分。采用分半法计算出本测验分半信度系数 $r=0.068^{**}$ ($P<0.01$)。

2.2.3 图式行为测验 要求被试对《野菊花》一文进行系统的图式整理,依据被试对课文图式整理水平,确定其五种图式行为。最高级计4分,最低级计0分。

2.3 实验程序 对逸夫小学部分五年级学生进行了前测,其目的是保证实验材料的可读性。团体实验。被试在安静的教室内进行。以纸笔方式答卷。试验开始前主试讲解实验内容,使被试理解题意。实验过程无具体时间限制。

2.4 数据统计 以被试正确回答课文图式数作为因变量测量指标。用Foxbase2.10对数据进行管理,并用SPSS/PC+软件进行数据分析。

3 结果与分析

3.1 图式意识与图式操作策略的关系(见表1)

表1 被试图式意识与图式操作策略相关关系

	最佳	良好	好	一般	无
找关键词	.0098	.0211	.0312	.1239	.0000
找重点句	.0341	.0431	.0782	.1402*	.0000
关系分析	.0875	.0971	.1456*	.1762*	.0000
段落结构	.1834*	.1907*	.0986	.0783	.0000
课文图式	.2321**	.1897*	.0991	.0412	.0000

注: * $P<.01$ ** $P<.001$ (下同)

从表1可知,最佳图式意识与课文图式策略存在非常显著正相关,与段落结构策略相关;良好图式意识与段落结构策略及课文图式策略有显著正相关;而好图式意识和一般图式意识仅与寻找重点句策略和段落结构策略存在正相关。这说明被试的图式意识水平越高,越能选用高级图式操作策略理解课文。反之亦然。

3.2 图式意识与图式操作策略的难易程度的关系(见表2)

表2 被试图式意识与图式操作策略的难易程度相关关系

	最佳	良好	好	一般	无
很容易	.2310**	.1891*	.1659*	.0312	.0012
比较容易	.1872*	.1540*	.1341	.0456	.0218
容易	.1539*	.1421	.1231	.1012	.0219
不容易	.0021	.0121	.0319	.0762	.1453*
不知道	.0000	.0000	.0121	.2134**	.2414**

表 2 显示,最佳图式意识与图式操作策略的很容易程度存在十分显著的正相关,与比较容易和容易操作存在相关,良好和好图式意识与很容易和比较容易操作亦存在相关,一般和无图式意识与不容易操作和不知道怎样操作存在明显的正相关。而其它项目都不存在显著的相关。这表明图式意识的水平决定图式操作策略的难易程度,即水平越高,操作越容易;水平越低,操作越差。

3.3 图式意识与图式操作策略的准备状态的关系(见表 3)

表 3 被试图式意识与图式操作策略的准备状态相关关系

	最佳	良好	好	一般	无
总是	.2319**	.1983*	.1893*	.0712	.0000
常常是	.1987*	.1735*	.1650*	.0916	.0012
是	.0928	.0997	.1231	.1203	.0731
有时是	.0123	.0219	.0241	.1495*	.2130**
不是	.0000	.0000	.0192	.1749*	.2134**

从表 3 可知,除最佳、良好和好这三种图式意识与常是和常常是这两种图式操作策略的准备状态存在正相关外,其它项目均不存在相关。表明潜在的图式意识水平与图式操作策略已有的准备倾向关系密切。

3.4 图式意识与图式行为的关系(表 4 略)

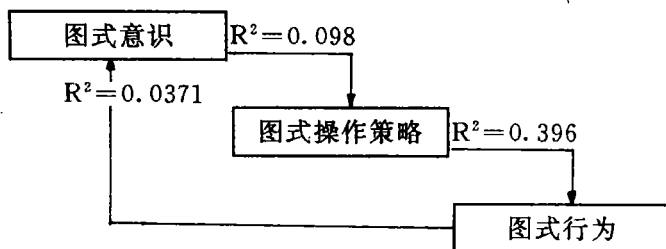
分析结果表明,最佳、良好和好图式意识与第五级图式行为之间存在显著正相关,相关系数 r 分别为 0.467,0.419,0.381;一般和无图式意识都与第一、第二和第三级图式行为存在显著相关(r 分别为 0.312,0.301,0.291 和 0.291,0.216,0.201)。这说明图式意识水平越高,图式行为越理想;反之亦然。

3.5 图式操作策略与图式行为的关系(表 5 略)

分析结果表示,图式操作策略的三个方面(策略、难易度和准备状态)与图式行为水平均存在明显的等级相关,相关系数 r 分别为 0.401,0.312,0.415,这表明被试的图式行为与策略水平、难易度及准备状态存在十分显著的关系,即良好的图式行为依赖于策略掌握的水平、提取的准确性及最佳的准备状态。

3.6 图式意识、操作策略与行为的关系

上述我们考察了图式意识与图式操作策略、图式操作策略难易程度及图式操作策略准备状态之间的关系,图式意识与图式行为之间的关系,图式操作策略与图式行为之间的关系,而还没有考察出三者之间的影响路径、影响程度,因此,我们又进一步采用路径分析技术考察了图式意识、图式操作策略与图式行为的线性关系,结果见下图:



从上图可知,图式意识、图式操作策略和图式行为三因素之间存在明显的线性关系,彼此影响也很大,但存在差异,其可决定系数 $R^2=0.098, R^2=0.396, R^2=0.0371$ 。说明图式行为受图式操作策略影响比受图式意识影响要大。

4 讨论

研究结果表明,小学生课文图式获得过程是一个认知建构过程,在该过程中,他们的图式意识、图式操作策略及图式行为是相互影响、相互制约的。其具体表现为以下两点:

1. 具有明显的依赖性。从表1—3可知,只要被试具备最佳的图式意识,他们就会准确地使用高级的操作策略,即采用课文图式。相反,当被试图式意识低或无图式意识时,图式策略的选择很困难,图式操作策略的环节也无法展开,图式行为根本不能产生。这说明被试已有的图式意识在课文阅读中尤如一盏指路明灯,指引阅读过程不断积极地朝向课文线索(张向葵,1999)^[4]。线索是各知识节点的“联络员”,它一旦被被试清晰地发现,就能容易地、快速地、准确地将信息输送到联络中心,激活相关知识点,使图式得以表征,使相应的图式行为得以产生。实际上,这也就是我们在课堂上发现有些学生能快速给文章划分段落、归纳段落和概括中心思想,而有些学生不能的主要原因之一(张向葵,1997)^[5]。这说明小学生课文阅读图式的形成过程是一个认知过程,其中图式意识是一种潜在的认知成份,在阅读课文过程中起引导作用,图式操作策略是一种在课文阅读活动中思考问题的操作过程,即为了达到一定的阅读目标而学会学习的规则、技巧和方法,它能提高学生学习的效率;图式行为则是上述两种因素的外部表现,受它们的程度、水平和质量的制约。

2. 具有明显的差异性。线性关系模型图表明,图式操作策略直接影响着图式行为。其可决定系数为 $R^2=0.396$,这就是说,在图式行为中,有39.6%的比例是由于图式操作策略带来的。而图式意识对图式操作策略的影响较图式操作策略对图式行为的影响小,其可决定系数为 $R^2=0.098$,即在图式操作策略中,只有9.8%的比例是由图式意识决定的。在图式行为中,图式意识的比例仅占3.71%,说明图式意识对图式行为的影响并不很重要($R^2=0.0371$)。

上述两个结论无论是对教师还是对学生都十分重要。它无疑告诉我们,图式操作策略之于图式行为是起极为重要作用的,要提高学生的课文阅读能力,就应该在图式操作策略上很下功夫。我们的结论与国外图式教学实践是相符的,即对学生进行图式行为训练:一则要强化图式意识;二则要使之多掌握一些图式操作策略;三则使之知道何时该运用何种策略。从而教会学生会阅读、会理解、会学习。

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TIVE STYLE AND CHILDREN'S PARTIALOCCLUSION DRAWINGS

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130 young children aged 5-6 participated in this study. Two experiments were made to study the different processes of the partial occlusion drawings of participants of different styles. The results showed that there were individual differences in the children's partial occlusion drawings; the field-independent children could keep view-specific in the misleading situation. It was more difficult to draw two identical partial occlusion objects than two different ones; there were some transforming patterns in partial occlusion drawings.

Key Words: children's drawing, partial occlusion, fielddependence/independence, coding process.

RESEARCHES ON THE PERFORMANCES IN SHORT-TERM MEMORIES OF CHILDREN WITH GOOD AND POOR SCHOOL ACHIEVEMENTS

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There were three types of memory tasks in the study, i. e. picture tasks, number tasks, and word tasks. 100 primary school first-, third-, and fifth-graders were asked to memorize 12 target stimuli each time, and then they were asked to recognize these stimuli from 24 stimuli. Half of the children were pupils with good school performance and the other half with poor school performance. The main results showed: 1) There were no differences between the two groups in picture tasks; but significant differences were found in the other two tasks. 2) Children with poor school performance recognized better in number and word tasks (excepting picture tasks) after they were trained to use the strategies; but the other group of children failed to do so.

Key Words: good/poor school performance, short-term memory, prompting.

THE ATTITUDE CHANGE IN THE PUBLIC AWARENESS OF THE CONSERVATION OF THE TIGER

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Several groups of audiences in Shanghai were examined on their current awareness of tiger conserva-

tion in order to evaluate the success of "Reducing Tiger Products in China", a public awareness project conducted by WCS Asia Conservation Communication Program. The results of the survey showed that after certain publicity and education, the awareness of tiger conservation among middle school and university students has been significantly raised. On the other hand, because of the influence of traditional culture, most of the Chinese people still believe in the medical efficacy of tiger bones, and they will still try to use the tiger-based products if needed, in spite of the fairly good recognition of the endangered status of the remaining wild tigers and the knowledge of wildlife laws. As a result, it's necessary to continue the publicity and education to gradually change people's perception of the medical value of tiger products and their attitude towards the use of them.

Key Words: awareness on conservation of the tiger, attitude change.

EXPERIMENTAL RESEARCHES ON THE PSYCHOLOGICAL MECHANISMS OF MENTAL ABACUS CALCULATION

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After reviewing the recent experimental researches on the psychological mechanisms of mental abacus calculation (MCA), the article pointed out that the researches on MAC, mainly through the comparison of experts and novices, focused on the effects of the training of MAC on the span of memory, the transfer of memory, modes of processing and the functions of the brain, so as to verify the existence of the image of mental abacus, but they neglected the developmental process of the expertise of MAC.

Key Words: mental abacus calculation, expert-novice, image of mental abacus.

A STUDY OF THE RELATIONSHIP AMONG THE SCHEMATICAL AWARENESS, STRATEGICAL OPERATION OF SCHEME AND SCHEMATICAL BEHAVIOR IN TEXT READING OF SCHOOL CHILDREN

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This study used the method of textual analysis to test 184 subjects of 5th graders of primary school in order to find the relationship among schematical awareness, strategical operation of scheme and schematical behavior in text reading. The results indicated that the relationships among them were not only correlation, but also differences. In other words, the strategical operation of scheme is more influential on schematical behavior than schematical awareness.

Key Words: text, schematical awareness, strategical operation of scheme, schematical behavior.

A CROSS — CULTURE STUDY OF SOUND SOCIAL CHARACTER

Lu Jianqing, Meng Hui, Song Jiwen, Nie Sha

(Psychology Department, East China Normal University)

Social character is an important component of the people's quality, which directly affects the development of socialist spiritual civilization. In the study, the authors observed that sound social character consists of five components: enterprising spirit, sense of morality, sense of leadership, attachment to the family and sense of safety. The authors employed the cross — culture research approach to compare sound Chinese social character with those of the Japanese, South Koreans, Europeans and Americans, and found from their study that some of the five components were well influenced by sex and nationality, which reflected cross — culture differences. This research should have theoretically and practically positive effects on shaping the sound social character of the Chinese people on the threshold of the 21st century.

Key Words: sound social character, cross — culture, spiritual civilization.

A STUDY OF CHILDREN'S IMPLICIT MEMORY WITH CONCRETE AND ABSTRACT PICTURES

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In this experiment children of 3 to 6 years old were chosen as the subjects, and two kinds of materials, concrete pictures and abstract pictures, were used. By means of the cross use of two kinds of learning patterns, implicit learning and explicit learning, we examined the effect and character of implicit memo-

ry and explicit memory of children of different age. The results showed that implicit learning did exist. Children's implicit memory of abstract materials was found to be better than explicit memory. The effect of implicit memory was better than that of explicit memory, and both memory effects developed with age. This study also confirmed the results of former researches: Children's memory of concrete pictures is better than that of abstract pictures.

Key Words: implicit memory, explicit memory, learning, concrete picture, abstract picture.

THE PSYCHOLOGICAL THINKING ON HUMAN RESOURCES MANAGEMENT IN HUAI NAN ZI

Zhu Yongxin, Fan Tingwei

(Suzhou University)

The authors think the managerial psychological thinking in Huai Nan zi inherited and developed the Taoism of Pre — Qin days. They sorted out the psychological thinking on human resources management from the areas of selection, recruitment and motivation.

Key Words: Huai Nan Zi, human resource management.

AN EMPIRICAL STUDY OF INFLUENTIAL FACTORS IN SHORT — TERM VIGILANCE PERFORMANCE

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This study investigated some influential factors in short — term vigilance performance. With an EP710 vigilance apparatus we explored the effects of time, signal density (signal — to — noise), and signal salience (occupancy — to — vacancy) on vigilance performance. The investigation method was the signal detection theory. The dependent variables were the discrimination exponent (d') and judgement standard (β). The results revealed that there were no effects of time and occupancy — to — vacancy on short — term vigilance performance, and the effects of signal — to — noise on d' but no effects on β .

Key Words: vigilance performance, vigilance decline, performance time, signal — to — noise, occupancy — to — vacancy.