IVA PÝCHOVÁ

Silesian University, Karviná

Slovakia

USING VISUALS IN DEVELOPING STUDENTS' CREATIVITY

When he was asked about his way of thinking Einstein said: „The words of the language as they are written or spoken do not seem to play any role in my mechanism of thought, which relies on more or less clear images of a visual and some of a muscular type" (Koestler 1981).

THEORETICAL BACKGROUND

Visual thinking has been studied by a number of scientists, either as a part of sensory thinking (e.g. Arnheim, Vygotsky, Koestler, Vernon) or in the connection with the activities of the brain hemispheres (e.g. Lurija, Warrington, Bradshaw, Nettleton, Menon, Allan, Lozanov and others). Also creativity has been the focus of studies since the middle of the 19th century. The names of Galton, Lombroso, Nisbet, Terman are connected with the beginnings of creativity research, while the personalities of Guilford, Torrance, Osborn, Gordon, Gatzels and Jackson, MacKinnon, Freeman, Weisberg and others represent various concepts of creativity elaborated in the 1960s' and 1970s'. In the 1980s' creativity was studied within the framework of the gifted children's education, e.g. by Renzuli, Tannenbaum and especially by Sternberg. Of Czechoslovak scientists engaged in the field of creativity let me name: Hlavsa, Dočkal, Kodým, Hvozdík, Musil, Jurčová and others.

DESCRIPTION OF EXPERIMENT

Our experiment the aim of which was to develop the students' creativity within the English language instruction began in 1987 and was closed in 1989. The subjects involved were 2 groups of 13 year old students of a secondary school. Each group consisted of 18 students of surprisingly similar characteristics: (family background, their parents' education and professions, the students' school results etc.). In the course of 2 years the test group udes a lot of special pictures for practising English grammar, while the control group carried out the same exercises and tasks in a verbal form. Both groups were taught by the same teacher and followed the same syllabus. The special pictures were stick figure pictures (pictographs) deliberately simplified to make the students use their own imagination and fantasy. They were presented on transparencies and suggested some contextual situations. The students were asked to make up the story or stories and to narrate them. However, when doing so they had to use certain grammatical structures, and that was the point. Thus their creative capabilities were developed within the English language instruction, in the form of com-municative strategies. At the end of the second year both groups were administered Říčan's standard Test of Intellectual Potential devised in 1971 for testing the IQ of youngsters between twelve and sixteen years of age. Then they were given six picture tests and four verbal tests. After each test the administrator interviewed two or three students. The students' opinions and feelings served in the evaluation of the results. Later both groups filled in a six-scale questionnaire investigating their self-concept.

EVALUATION METHODS

The results of the tests were marked from one to five points, point one being the best. The number of words that were not a mere description of the picture but were brought by the student's imagination, were counted and turned into percent and then into a five point scale. The 100% limit was the largest number of students' „own" words in a certain test.

The evaluation of the quality of the students' imagination and fantasy followed four criteria: the widht, the depth, the originality and the com-municative competence in the English language. The number of the students' „own" words and stories showed the width of their imagination and fantasy. A detailed elaboration of some story represented the depth of the students' imaginations. The choice of words and the uncommonness of stories indicated the originality of the students' imagination and fantasy. The basis for the

evaluation of communicative competence in English was a good understanding and an adequate form of the message.

A sort of cross examination of the previous results was carried out by the evaluation of the students' creative thinking. For this purpose Guilford's traits of creative thinking – sensitivity, fluency, flexibility, originality and elaboration – were made test criteria.

RESULTS OF THE EXPERIMENT

The results of all the tests show significantly better achievements of the test group compared with the control group. The total difference was 9,5% in favour of the test group. In sensitivity tests the test group was 16,25% better – which was the greatest difference recorded, in fluency tests the difference was 10%, in flexibility tests 7,5%, in originality tests of thinking 3,75%, in elaboration 10,75%. The test of group's language competence was 12,25% better than that of the control group, the width of imagination was 13,75% better, the depth of imagination 9,75% and originality of imagination in all tests was 12,25% better.

However, it has to be admitted that not all the differences were caused by the training for creativity. There were other factors that have to be taken into account, e.g. the influence of other teachers, other subjects, events, etc. Besides, the groups were too small to be able to draw any general conclusions from the results. Nevertheless, the significant differences indicate that using visuals does motivate the development in creativity and that it favourably affects the growth of foreign language competence of students. Also, it should be noted that the tests did not measure the general creativity of students, but their creativity in the field of their English language skills.

DISCUSSION

While the training for creativity practised in the past was solely oriented at raising the level of creative abilities of trainees, the experiment presented made the training for creativity not the aim, but a means of learning English. Thus the training got its specific content.

The results show that compared to verbal tasks, the form of visuals has a great impact on the creative abilities of students. In the first place it is the visibility i.e the explicitness of visuals that seems to support cognition, the perception of colours, shapes, forms, textures, motions etc., i.e. their large and concentrated information loading.

Most visuals represent reality in a more or less transformed manner. The representation usually bears a certain degree of simplification, abstraction, conciseness, sometimes even deformation. Consequently, the representation of reality in visuals can be characterized as a sort of pre-processing of reality. This pre-processing, unless it is extremely deforming or absract, helps the acceleration and facilitation of comprehension, cognition and learning. The simplification, conciseness etc. also support retention and recall. The elimination of redundant elements may motivate the students to find the original behind the symbol, or to imagine the incomplete phenomenon in its entirety. The large information loading of visuals provides a „material base for the students' creative activities. The visibility, explicitness of pictures intensifies perception and attention of the viewers and provides them with the feeling of concrete support in their independent activities.

Contrary to reading or listening to a verbal statement, the course of which is itemized (in words, utterances etc.) and successive, the perception of visuals is usually simultaneous and overall, thus providing the viewer with the whole image at a time. It enables the viewer to analyse the picture without having to retain its image as a whole or parts of it in his/her mind.

Also, thanks to the pre-processing of reality, the perception of visuals requires less efforts from the viewer. This may be the reason why viewing is often preferred to reading. Consequently, the intensity of the viewer's perception is higher and the concentration of his/her attention is longer than those of a listener or a reader. The factor that may stimulate the students' creativity is a certain „non-interference" of visuals in students' psychological activities. They leave students to choose their own words to describe them, to make their own interferences, to notice problems etc.

Summarizing the discussion, the following specific qualities of visuals supporting creativity can be underlined: visibility-explicitness, large and concentrated information loading, pre-processing of reality resulting in the stimulation, facilitation and acceleration of the students' psychological and pedagogical processes, wholeness and simultaneity of presentation of visuals, their „non-interference", high intensity and great endurance of students' perception and attention.

CONCLUSION

The experimental training for creativity and its results have brought a number of reasons justifying the broad use of visuals in language learning and instruction. Although using visuals should never be considered a panacea but only one of a number of strategies used in a foreign language learning

but only one of a number of strategies used in a foreign language learning and instruction, yet it proved to be an effective way of promoting creativity, suitable. moreover, for both talented and less able students.

In order to make the results more valid, precise, and reliable, it would be worthwhile to extend the research, to involve a larger number of students and various age groups and to verify the effect of training for creativity by means of visuals in a longitudinal study.

Nevertheless, the experiment which was carried out has made a step towards developing students' creativity within foreign language learning and instruction.

REFERENCES

A l l a n M. (1985), *Teaching English with Video*, Longman

A r n h e i m R. (1960), *Art and Visual Perception*, Berkeley, CA

B r a d s h a w J. and N e t t l e t o n N. (1981), *The Nature of Hemispheric Specification in Man*, Behaviour and Brain Science, 4, 51–91

F r e e m a n J. B u t c h e r H. J. and C h r i s t i e T. (1971), *Creativity. A Selective Review of Research*, London

G a t z e l s J. W. and J a c k s o n P. V. (1962), *Creativity and Intelligence*, Wiley, New York

G o r d o n W. J. J. (1961), *Synectics*, Collier, New York

G u i l f o r d J. P. (1950), *Creativity*, American Psychologist, 5, 444–454

H l a v s a J. et al. (1981), *Psychological Problems of Education for Creativity*, SPN, Praha

K o e s t l e r A. (1981), *Three Domains of Creativity*, [in:] D. D u t t o n and M. K r a u s z, *The Concept of Creativity in Science and Art*, Martinus Nijhoff Publishers, the Hague

L o z a n o v G. and N o v a k o v A. (1973), *Suggestopaedia*, Sofia

M a c K i n n o n D. W. (1962), *The Personality Correlates of Creativity: A Study of American Architects*, [in:] *Proceedings of 14th Congress on Applied Psychology*, ed. G. S. Nielsen, 2, Copenhagen, Manksgaard, 11–39

M c C a r t h y R. A. and W a r r i n g t o n E. K. (1988), *Discrete Memory Systems*, Nature, London

M e n o u a g e n T. K. (1957), *The Teaching of English as a Foreign Language*, Barada

O s b o r n A. (1955), *Applied Imagination*, Cherles Scribner's Sons, New York

R e n z u l l i J. S. (1986), *Systems and Models for Developing Programs for the Gifted and Talented*, Mansfield Center, CT: Creative Learning Press

Ř í č a n P. (1971), *Test of Intellectual Potential. Psychological and Didactic Diagnostic Tests Centre*, Bratislava

S t e r n b e r g R. J (1986), *A Triarchic Theory of Intellectual Giftedness*, [in:] *Conceptions of Giftedness*, ed. R. J. Sternberg, J. E. Davidson, Cambridge University Press, New York

T a n n e n b a u m A. J. (1983), *Gifted Children: Psychological and Educational Perspectives*, Macmillan, New York

T o r r a n c e E. P. (1962), *Causes for Concern*, Prentice Hall, 1–15

V e r n o n P. E. (1972), *Creativity. Selected Readings*, Penguin Books Ltd. Hammondsworth

V y g o t s k y L. S. (1956), *Izbrannyje psichologiczeskije issledovanija*, Moskwa

V y g o t s k y L. S. (1976), *The Development of Higher Psychological Functions*, SPN, Praha

W e i s b e r g R. W. (1986), *Creativity, Genius and Other Myths*, W. H. Freeman and Co., New York

Iva Pychowa

WYKORZYSTANIE MYŚLENIA ZMYSŁOWEGO W ROZWOJU TWÓRCZOŚCI UCZNIOWSKIEJ

Artykuł jest sprawozdaniem z eksperymentu, który przeprowadzony został na dwóch grupach uczniów 13-letnich charakteryzujących się podobnymi właściwościami rodzinnymi, niektórymi cechami osobowości oraz zbliżonymi osiągnięciami szkolnymi.

W eksperymencie użyto specjalnie dobranych obrazków stwarzających możliwość użycia ich do praktycznej nauki gramatyki z języka angielskiego. Obrazki te miały pobudzić wyobraźnię i fantazję badanych. Zadaniem badanych było napisanie opowiadania na podstawie tych obrazków, które były zróżnicowane pod względem treści, kolorystyki i innych właściowści.