Кількість значень згаданого параметра в загальному ряду спостережень, що мають значення менше від одиниці складає 30% від сумарної їх кількості для обох АЕС. Значення таких величин спостерігається переважно восени та весною. Сам факт наявності такого співвідношення, напевно, свідчить про вплив природного фактора (дощі, танення снігу, гідрогеологічні процеси тощо).

Висновки:

1. Доля викидів парникових газів, які утворюються при виробництві 1 кВтЧгод електроенергії на АЕС є найменшою;

2. Якість води в верхів'ях річок Горинь і Стир за радіоактивними забрудненнями в зоні РАЕС і ХАЕС є нестабільною і має широку амплітуду коливань;

3. Вплив АЕС на забруднення води річок Горинь і Стир є суттєвим. В зоні РАЕС і ХАЕС в воді річок кількість радіоактивних забруднень зростає відповідно в 1,6 та в 1,5 рази.

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IS THERE MULTIMEDIA DIDACTICS AT ALL?

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An essay on the development of the didactic multimedia from its conception to date.The very word 'multimedia' is thoroughly intertwining with al facets of of our everyday lives. Its frequent appearance demands the exact definition of this phenomena. 'Multimedia' is far more, than any single medium on its own, that is vying to be informative, and for purposes, by linking them together- these media system have been available in the past few decades. What new is in the multimedia, the prominence of the personal computer (PC), as the key in this driving force, pertaining to information storage on multiple forms of retrieval system, such as CD-ROM or on the computers's own internal hard drive. This multiple option of retrieval from interactive linkages is made possible by the core position of the computer. At the time, when the user of the multi media applications -including real time simulation and creation of virtual worlds- he may continuously interact. In the near future, the computer ostensibly will b more, than a symbol, a manipulator, but the possibility of of creating virtual worlds with its capabilities, where there is a multitude of information is readily available. This essay attempts to examine from the point of view of the creation of a curriculum, that transposes its advantages in the educational system in our learning institutions. The following questions are answered, with the help of the aforementioned researched literature.

Has the special didactic multi media emerged yet?

What help does the didactic multi media provide?

What is the importance of interactivity and visuality in the development of educational programs?

How beneficial are these programs?

To answer the question, the concept of didactics must be taken for a starting point. Didactics is a branch of pedagogy, the theory and practice of teaching and learning.

In Bruner's view (1974) education theory includes all the theoretical and practical problems of teaching and learning guided by teaching. He interprets the activity of teaching and learning as an active, interactive process affecting the entire personality.

Media didactics is a discipline of didactics devoted saliently to the construction, use and effect

mechanisms of media and media systems in the process of information and learning. Media didactics roots in the educational technology of the 1950s and '60s (Issing and Knigge-Illner, 1976).

In Germany and Europe in general media didactics evolved from the educational technology imported from the USA where it is an independent major subject at nearly every univeristy. The roots of educational technology go back to behavioural psychology (Skinner). As its main characteristics, this psychology derives its learning theory from effective conditioning and keeps the learning process within strictly defined frames. The steps of effective conditioning and programmed learning based on it are the following:

- analysis of task
- gradual progress in small steps
- active learning
- definition of individual learning pace
- direct feedback and reinforcement

These steps characterize programmed teaching and are partly recognizable in today's computer-assisted education.

The further development of educational technology was influenced by other trends of pedagogy and psychology as well. To quote a few examples: "Classification of educational goals" by B.S. Bloom (1956) and "Planning the educational system" by B.H. Banathy (1968).

In Germany, the work of H. Frank (1976) is worth mentioning in the area of cybernetic pedagogy, leading to the definition of the system-oriented didactic model. The fundamental determinant of the educational technology of any time is the setting of a rational goal and the planning of optimal instruction for the attainment of the set goals.

Such an educational technology was fiercely attacked in Germany by ever more independent media pedagogy in the mid-'70s. It relied on the technology criticism of the Frankfurt School (Habermas 1968), turning against the control of teaching and learning processes by educational technology. All this led to the development of the action-oriented concept of media pedagogy.

As a result, in Germany the educational technological concepts could mostly assert themselves in adult education and post-graduate training, e.g. in computed-aided teaching (Computerunterstutzten Unterricht, CUU, computer-based training, CBT) where they have been used with quite some success to our day.

Summing up statements about the development of media didactics, one may declare that based on behaviorist psychology, educational technology and media didactics have shaped education and specialist training in the USA and Europe for over 30 years now; its aim was to optimally plan, develop and evaluate the individual media and media systems with the method of planning educative systems.

Media didactics has taken a close look at the prospective efficiency of any new medium potentially useful for education and tired to integrate them in the practice of education.

What help can media didactics lend?

The model of educational planning has been tested and proved feasible in thousands of media projects, and provides the basis for the development of teaching softwares and media products. The main phases of instruction transaction are: analysis, planning, development. The phases are further subdivided, and useful manuals are available for the elaboration of the subphases.

The media didactical models and guidelines are the outcome of long scientific disputes, are based on theoretical foundations, are mostly experimentally verified and incorporate the practical experiences of didactic experts, teachers and instructors.

These didactic models and rules are guiding principles and general rationale for the programme authors instead of being detailed recipes for the concrete tasks. For actual media-development, the practical experiences gained in education and the media, as well as programme development are indispensable. It is therefore advisable to carry on programme and multi-media development in teams involving specialists, experienced teachers, experts of media didactics, graphic designers and computer specialists.

At present, substantial changes are taking place in the psychology of human information elaboration, which has its impact on the principles of instruction transaction. This change is most conspicuous in the interactivity of teaching programmes.

Interactivity in teaching programmes

The extent to which computer-based education accomodates to the individual requirements of the pupils, to which it allows for an individual course of learning, depends on the available equipment and the didactic conception of the author of the software.

The spectrum of interactivity ranges from total system-dominance to total learning-dominance. The first generation of CBT programmes were closer to system-dominance, allowing for no more freedom than the choice of the learning pace and of multiple solutions, without giving alternative information and media supply.

Unfortunately, programme designers make little use of the motivating forms of interaction, such as the emphasis on lifelike problem situations, simulational tasks or races.

Closer to the learning-dominant pole are the hypertext and hypermedia systems, which are characterized by the arrangement of certain information and media elements in multidimensional networks. They allow for associative, discovering learning. Such a structure requires the user's (learner's) interactivity and control, offering so many possibilities and so much freedom that the danger of being lost in this hyperworld is also implied unless the learner gets some guidance.

Today, adaptive, relatively easy-to-use programming tools are available for the elaboration of hypertext and hypermedia systems, which the target user can also apply with some guidance. (Such are "Toolbook" for the MS-DOS system, and "NoterCard" to the Sun system, connected to which "Authorware Professional" is especially noteworthy.)

To decide what is the optimal rate of learning-direction one can rely on the findings of experiments. These have revealed that those who are unskilled, beginners or less independent learners need more guidance than the advanced pupils. While beginners get lost without didactic assistance, advanced pupils deem it a restricting factor in the learning process. (Neber, Wagner and Einsiedler, 1978). It must therefore be empirically decided for every user what the optimal rate of learning freedom and interactivity should be. The planning of the first-generation instructional programmes was built on the model of effective conditioning and behavioral psychology based on objectivism. In psychology, a paradigmatic change has taken place towards cognitive psychology, which has adduced serious counterarguments to the former kind of planning.

In addition to declarative knowledge as the subject of learning (what to know), procedural knowledge (how to know) and contextual knowledge (why, when and where to know) gained importance. Emphasis shifted from positive knowledge to the acquisition of cognitive skills and strategies (Tennyson 1992).

It was first of all Merrill and his team of Utah University (Merrill, Li and Jones, 1992) who championed the cause of designing a second-generation instruction programme. They worked out an instructional transaction theory in 1991, which enables beginning programmers to develop an instructing programme with the help of an instruction transaction shell (ITS).

In 1991, experiments were conducted with the ITS to develop a teaching programme in a laboratory of the air force teaching candidates the knowledge of the airplane instrument panel. Having been taught the use of the "shell" in a 7-hour instruction, the teachers inexperienced in computer-based education were capable of working out a 2-hour teaching programme in a mere 30 minutes - which was a major success, especially in view of the fact that a one-hour teaching software needs some 200-600 workhours to be developed (Spector 1991).

Visualization of the teaching material

Computer graphics, still pictures, colour video strips with sound will soon be self-evidently demanded by the users, but they still need much work input to be prepared.

The author of the teaching programme must decide whether he wants to visualize the entire material or it serves the cause of learning better to restrict the visual representation. It is also to be decided which form of visual appearance should suit best which goal. Media psychology and media didactics are concerned with these areas.

Firstly, visualization is required where pupils have no first-hand experience, e.g. faraway lands, microscopic or macroscopic fields. Secondly, visualization can render invisible, abstract things - theories, models, principles and ideas - visible. Accordingly, three forms of visualization can be differentiated: figures, logical pictures and visual analogies.

- figures (photos, video records) corresponding perfectly to reality can substitute for first-hand experience

- logical pictures (graphs, diagrams) belong to congitive elaboration and schematization for the visualization and simplified presentation of compex structure

- visual analogies (visual similes) present analogies to structures and facts not visible to the naked eye (DNS structure through a zip). Good visual analogies are useful to help pupils understand complex facts by placing a well-known thing in a completely new area.

The didactic foundation of media-assisted presentation lies in the direction and motivation of the pupils' interest and attention at first and in promoting conceptualization, which in turn will be decisive in the process of comprehension via creating mental models. (Mandi, Friedrich, Hron, 1988). Multimedia dissemination of knowledge is optimal when it provides the pupil the very aids that he is in need of to be able to carry out the required cognitive operations. In other words, the presentation through the media optimally makes up for the cognitive deficiencies of the pupil. In his substitution axiom, Salomon (1979) gave theoretical explanation to these functions required by media didactics: the information must be modelled in accordance with the pupils' given knowledge and skills exactly as they require it so that they could actively acquire the new knowledge.

Educational psychology has proven that visual information is more easily elaborated and fixed than textual information, and an ensemble of complementary visual and textual representation leads to better retrieving performance (Issing and Hannemann, 1983). The embeddedness of the visual image in the text is decisive in its promotion of learning. If this fact is ignored, then the informative and teaching programmes with the help of the media will only have motivating and esthetic effects, which is insufficient for education. Ill-coordinated visual-textual representation of information may be detrimental to the learning process. Because this is a central concern of visualization, there are many media critical rules that are most useful in concrete cases (Petterson, 1989).

Eventually, the expediency of the forms of presentation is assessed on the basis of the complex effect of the information and teaching programme in practice.

On the efficiency of teaching programmes

The media didactical theories, ideas, models and guides can only give basic principles and general advice to the creation of informative and teaching materials. When it comes to a concrete programme, the specificities of the discipline, the educational goal, the target group and the conditions of education must all be taken into accout, each ensemble of preconditions requiring a different solution. It is therefore vitally important for the efficiency of a programme or media supply to evaluate it. During the development of the programme there is also critical monitoring to see what necessary corrections will have to implemented in the next phase (Issing, 1976), and there is summary evaluation after testing it among users.

It is a generally intriguing question whether teaching programmes and media supplies are really efficient. It is no accident that this question has high priority in the economic calculations of educational institutions. Is multimedia instruction as effective as other teaching methods, or maybe more effective? How widely is it accepted? How much is it suited to a variety of teaching goals?

It is very hard to measure the efficiencey of instructional programmes and media in methodologically impeccable forms. The influence of novelty, the variants of experimentation, the situational effects and variables such as the teacher's personality, the topic of the material, the special educational goals, age, previous studies, knowledge, pupils' acceptance of the computer all largely influence the outcome.

The synthesizing examination of several individual experiments has found that the efficiency of various types of computer-aided learning is different (Kulik, Kulik and Shwalb, 1986). The influence of computer-assisted instruction (CAI), computer-managed instruction (CMI) and computer-enriched instruction (CEI) is different among primary and secondary school pupils, university students and adults.

Several comparative investigations carried out upon the request of the German Federal Post and Volkswagen AG did not find significant deviation between CUU/CBT and traditional instruction (Fricke, 1991). Yet these examinations also suggest that CBT is not merely useful in conveying information, but also helps the acquisition of more complex abilities (e.g. behavioural training) and to complement sensibly the other forms of instruction. Pupils prefer a combination of CBT and personal instruction most. The best solution to the problem of education is a rational combination of CBT, teacher's instruction and group discussion.

The efficiency and acceptance of the second-generation multi-media programmes of instruction

transaction have not been studied yet. Since in view of visualization and interactivity, these multimedia teaching programmes are more user-friendly than the earlier CBT programmes, they are expectedly at least better received. Whether their efficiency in the attainment of educational goals is also better than the previous CBT programmes is still to be investigated.

In the fields of education and information gathering the demand is ever so great for a very finely tuned and sensitive understanding in these newly established scientific facts, that are based on these multimedia provided opportunities.

We must forget outdated and slipshod programs. For the danger does exist, if the multimedia technologies are not applied in their proper didactic forms, they will be rejected before their technological advances and benefits could be realized.

In the area of development of the multimedia application demands a thorough media didactical groundwork, as well as its theoretical proof. It is not enough to introduce something 'nice' on the monitor. Even though it might seem 'pretty' and even plausible that may depend merely on intuitions, or exclusively relying on a hands on professional's opinion, it must be rejected. These journeymen may have learned their craft -and can rely on- their past and outdated experiences, therefore, they cannot apply the new didactical multimedia's possibilities, as well as its powers to attain the best pedagogical results.

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MARKETING USŁUG SPORTOWYCH

Leszek KORZENIOWSKI

Pojęcie marketingu nie zostało dotąd jednoznacznie zdefiniowane. Sam termin *marketing* pochodzi od angielskiego słowa *market'* i w zasadzie nie ma precyzyjnego polskiego, rosyjskiego lub ukraińskiego odpowiednika. Wiele różnych czynników doprowadziło do uformowania się marketingu w dzisiejszym rozumieniu.

Ujawniające się w latach dwudziestych ubiegłego stulecia w Stanach Zjednoczonych i na początku lat pięćdziesiątych w Europie Zachodniej bariery popytowe i trudności ze zbytem towarów spowodowały rewizję dotychczasowych poglądów na źródło ekonomicznego sukcesu i do zmiany dotychczasowej orientacji produkcyjnej przedsiębiorstw. Dominujący w zarządzaniu przedsiębiorstwami problem "jak produkować" został zdominowany przez pytanie: "jak sprzedać". Analiza tego zagadnienia na tle komplikujących się stosunków rynkowych doprowadziła do konkluzji,