

Две стратегии реализации интерфейса в языке программирования C#

В статье описываются две стратегии реализации интерфейса. Первая стратегия задает дополнительные свойства объектов класса. Класс, наследующий интерфейс и реализующий его методы, может реализовать их явно. Другая стратегия реализации состоит в том, чтобы некоторые методы интерфейса сделать закрытыми (private), уточнив имя метода именем интерфейса.

Ключевые слова: *интерфейс, программирование, методы, программный код, классы, объектно-ориентированный язык программирования.*

УДК 378.14

T.M. Saliy, Candidate of Pedagogical Science

Innovative University of Eurasia (Pavlodar),

I.M. Makarikhina, Candidate of Pedagogical Science

Pavlodar State University, named after S. Toraigyrov (Pavlodar)

E-mail: toma_sal@mail.ru, michmacha@mail.ru

Using new generation e-books in high school educational process, including faculty of teachers' development

Annotation. *The article describes that the effective management of the learning process new textbooks using need to create a model of teacher action. The created model explicitly takes into account the objectives, methods, learning outcomes. With its help solve the problem of the knowledge of the student. And the problem of managing the cognitive activity is settled.*

Key words: *educating, electronic textbooks, educational process, higher education, control of knowledge*

The current stage of Kazakhstan and Russian society development is characterized by the educational possess of information technologies. The transition to the education multi-level system requires higher education institutions providing such training of highly qualified staff, which could combine the ability to solve actual scientific, technical and socio-economic problems.

The most important moment in modern education today is how the knowledge-based acquire skills, to transform them and develop new knowledge in learners' professional activities. Modern Kazakh and Russian education's difficult task is to provide humanistic, technological and fundamental principles integration with modern requirements of information, humanization and fundamental education bases.

Teacher education, as an integral part of modern education system, has the vital role of staffing higher education. The need for changes in teacher education is defined as the external challenges and internal laws of its development, future needs of an individual, society and state.

You can often come across the term "new information technologies" in the scientific and popular literature. This is quite a broad term for a variety of practical applications. The adjective "new" in this case emphasizes radically different approach from the previous direction of technological development. Their introduction is an innovative instrument in the sense that it fundamentally changes the contents of various high schools activities. You can create a well-designed electronic textbook, which will carry only the information from a paper to computer-based, but the technology does not satisfy the basic principles of educational technology and will not solve the theoretical or practical problems that appeared previously in didactics.

Nowadays multimedia technologies can integrate a variety of informational media presentation: texts, static and dynamic graphics, video and audio clips into a single complex. The use of animation, sound and video greatly enhances the assimilation of educational material on the structuring of knowledge and reduces the learners' level of cognitive effort, while reducing the time required for the study of such a problem.

Accordingly, the media are being used successfully in the development of electronic textbooks. New textbook's generation provides the ability to select a desired line of development represented by the plot or situation on the user actions' analysis.

The use of e-textbooks in the classroom activities is an effective means of enhancing learners' cognitive activity, which opens up opportunities for teachers to improve training. Simulation computer programs are studied material more clearly; they can show the experiments with no equipment in high school. In addition to this, learning technology significantly saves time on the classroom activities (information retrieval, control learners' knowledge).

Since modern education is characterized by the active use of information and communication technologies (ICT) and various devices on their basis to ensure: access to the global resources of the Internet, operation of automation systems, use of electronic educational purposes, computer psycho-educational

assessment, so among the main objectives and directions of teacher education modernization specifically refers to the need of teachers' using ICT in education development.

The purpose of new generation electronic textbooks using in the high school educational process is the high level of teachers' information competence development.

With the help of computer programs every teacher can create a learning environment. The term "learning computer environment" is used by many researchers in their works. A.L. Smetannikov believes the educational computer environment is used to focus on specific disciplines' themes and chapters studying and it is aimed at forming functional skills of a learner's mental actions [1].

The problems of new information technologies introduction in the educational process are discussed in the works of many foreign authors K. Evelin, B. Oliver [2], J. Higgins [3,4], etc.). These scholars' works are devoted to the study of information influence on the educational content.

Opportunities and roles of multimedia technologies in the process of higher education are discussed in the works of such foreign researchers as P. Carell [5], C. Daiute [6], N. Garret [7].

Over the past twenty-five years computers and information technology have been significantly changed. Abrupt, revolutionary changes in cell-based computers not only led to a sharp decrease in their size, but, more importantly, to improve the reliability, accuracy and speed of their work, expand their roles from the actual computing to more complex, logical, heuristic, and to a certain extent - creative. It would be unacceptable miscalculation not to use these specifications, information and communication possibilities for educational purposes.

One can cite numerous and quite convincing examples that prove the effectiveness of electronic textbooks use in the learning process:

- at the stage of educational information presentation;
- at the stage of learning - aids studying in the process of computer interaction;
- at the stage of competences repetition and retention (competences);
- at the stage of interim and final control and self-learning outcomes achieved;
- at the stage of assessing learners' results, education process itself, and its results through dosing study material, its classification, ordering, etc.

All these didactic and methodological features are undeniable. Besides, it is necessary to take into account that the use of rationally composed of computer training programs as part of e-books can personalize and differentiate the learning process, to stimulate a learner's cognitive activity and autonomy.

Multimedia technologies are really effective, they contribute to the well-known didactic principles of educational process realization, approve a teacher activity entirely new content, allowing it to focus on its main training, educational and developmental functions.

Electronic textbooks containing laboratory courses, allow a teacher to organize his work with simulation tools, objects of study, experiment's conditions.

Control is one of the main types of educational process, as it allows verifying the results of learners' education and cognitive activity, pedagogical skills of a teacher and teaching system quality. Virtually every type of control can be implemented with the help of e-books, on the basis of especially developed computer programs to strengthen control's efficiency and timeliness. The use of computer programs is especially effective in the current and intermediate control. Specially designed testing programs of any electronic textbook (figure 1) provide, on the one hand, the possibility of learner's self-control, and the other - take on a routine part of current or final control. Computer testing system can be both a separate program that does not permit modifications and universal greasy soft shell, the filling of which is assigned to a teacher.



Figure 1 – The course structure

Electronic course "Foreign language teachers' didactic preparation" contains structured multimedia lectures, interactive practical exercises, tests (figure 2).

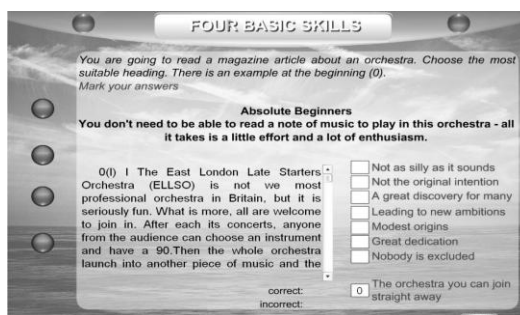


Figure2 – Computer testing system in the electronic textbook

The introduction of these materials and thematic coverage of all components were prepared for each component: 1) pedagogy glossaries, 2) glossary on teaching foreign languages courses, 3) lectures, 4) support materials for each component, 6) multi-level bank test items, 7) materials for master - classes preparation, 8) materials for multimedia technologies' use; 9) supporting materials for on - line conferences preparation can improve the didactic competence of multilingual teachers with research and creative activities and innovative teaching information technologies.

Component 1: Cognitive.

Component 2: Motivation.

Component 3: Methodological.

Component 4: Organizational and projecting.

Component 5: Research.

Component 6: Reflective.

The purposes of the special course are to improve methodical competence and to build teacher's individual didactic system.

At the end of the course, foreign language teachers will be able to:

- analyze any kind of lessons;
- analyze the both colleagues activities and their own;
- analyze the learners' activities;
- analyze textbooks and teaching aids;
- consult relevant academic literature;
- conduct class action research;
- carry out the survey and interview;
- conduct assessment;
- carry out a scientific experiment;
- write an article on any methodological problem;
- participate in any discussion of methodological issues;
- summarize the classroom experience.

All course's components thematic focus, supporting material were prepared for each component, glossary, lectures, multi-level tests, workshops, multimedia technology can improve the didactic training of foreign language teachers with research competence and creativity and innovative teaching techniques.

Electronic monograph in "Development of foreign language teachers' didactic preparation on the base of the competence approach" (figure 3) was written together with scientists of Kazakhstan and the United States can be used as a teaching aid in practice courses of teachers training faculty.



Figure 3 – Development of foreign language teachers' didactic preparation on the base of the competence approach

Electronic textbook performs support functions of purely objective educational information that helps teachers and learners. The current stage of informatization sphere of higher education is characterized by a significant increase in computer fleet by improving its qualitative structure, the development of telecommunications environment with the entry of people into the international network, the creation of applied information systems.

Currently professional education includes online tutorials on various subjects and teachers development courses.

At the same time, teaching is not sufficiently defined conditions of new textbooks application; structure and method of their creation and use are not worked out.

Electronic textbooks must meet the following didactic requirements [8]:

1. correspond to the contents of education mandatory minimum and at the same time exceeding this minimum;

2. interactivity models;

3. feedback;

4. ensuring conditions for research skills formation;

5. unity of teaching and supervisory functions;

6. differentiation of tasks;

7. corresponds to learners possibility and create an environment for individual growth;

8. choose the path of learning.

All electronic textbooks have to be adapted to the basic specialty's profile. Their specificity must be linked to a formalized representation of knowledge content a high degree of training workshop, which aims not only to develop problem solving skills and laboratory work performance, but also a set of professional competences. The use of multimedia technology allows you to create high-quality video lecture demonstrations, computer labs and workshops, animated simulation models needed to understand their essence.

To effectively manage an education process using new textbooks need to create a model of teacher actions, explicitly taking into account the objectives, methods, results and learning to solve two main problems: the problem a learner's knowledge level and control problem of cognitive activity. The essence of the first task consists in recognizing the level of a learners' knowledge. The essence of the second problem is planning and implementing the optimal sequence of actions that ensures maximum absorption of knowledge in a given time.

Finally a few words should be said about the advantages and disadvantages of e-books.

The advantages of e-books include [9]:

– the possibility of building a simple and convenient mechanism for navigation within the electronic textbook;

– developed the search principles within the electronic textbook, in particular, the use of hypertext format editions;

– the possibility of built-in automated control of a learner's knowledge level.

There are two e-books' material weaknesses [10]:

– the need for a computer with the appropriate software and monitor quality;

– learner's fatigue during his work with a monitor.

In conclusion it should be emphasized the structure of any e-textbook in a specific discipline including a description of different various modules (sections, topics), focus on their relationship and consistency. The learner can see and understand the structure of the studying course. The navigation system of any electronic textbook provides direct referrals from any module or unit to the main page, to the "bookmarks" (navigator, theory, examples, assignments, questions, tests, thesaurus), any transitions between units of the same unit as well as forward and backward through the sequence of frames.

The library functions are changed with the introduction of e-books in the educational process of the university. Its role is played by the electronic reading room. All readers of this library without any queue can independently select and read any e-books, including the same are automatically replicated for them in any number of counterparts.

E-textbooks can be used within a variety of forms and technologies, which implementation is necessary to organize the work of learners (including self-employment) in the classroom, in a computer lab, a library, a methodical study and other methodological support for the organization of learners' independent work should focus on the use of modern methods and technologies, such as distance learning.

REFERENCES

1 Сметанников А. Л. Совершенствование подготовки учителей информатики путем введения элементов информационного моделирования в проектирование программных средств учебного назначения.: дисс. канд. пед. наук. - М., 2000. – 148 с.

2 Evelyn K.L., Oliver W.P. Computer Assisted Language Learning / An Investigation on Some Design and Implementation Issues // System. – 1987. –V.15. – № 1. – P. 31-39.

3 Higgins J. Can Computers Teach? // CALICO Journal. – 1983. – V.7. – No2. – P. 23-27.

- 4 Higgins J., Johns T. Computer in Language Learning. – Glasgow, 1984. – 112 p.
- 5 Carell P. et al. editors. Interactive Approaches to Second Language Reading. Cambridge Applied Linguistic Series. – Cambridge University Press, 1988. – 80 p.
- 6 Daiute C. Computers and teaching of writing // Peterson (ed.) Intelligent on computers and learning. – Reston, 1984. – P. 108-116.
- 7 Garret N. Technology in the Service of Language Learning: Trends and Issues // The Modern Language Journal. – 1991. – V.75.1. – P. 74-101.
- 8 Коджаспирова Г.М., Петров К.В. Технические средства обучения и методика их использования: учебное пособие. - М.: Изд. центр «Академия», 2001. – 180 с.
- 9 Новые педагогические и информационные технологии в системе образования / Под ред. Е.С. Полат. – М.: Изд. центр «Академия», 2001. – 102 с.
- 10 Вуль В.А. Электронные издания: учебник. – М. – СПб.: Изд-во «Петербургский институт печати», 2001. – 308 с.

REFERENCES

- 1 Smetannikov A.L. Sovershenstvovanie podgotovki uchiteley informatiki putem vvedeniya elementov informacionnogo modelirovaniya v proektirovanie programmnyh sredstv uchebnogo naznacheniya: diss. kand. ped. nauk. – М., 2000. – 148 s.
- 2 Evelyn K.L., Oliver W.P. Computer Assisted Language Learning / An Investigation on Some Design and Implementation Issues // System. – 1987. – V.15. –Nol. – P. 31-39.
- 3 Higgins J. Can Computers Teach? // CALICO Journal. – 1983. – V.7. – No2. – P. 23-27.
- 4 Higgins J., Johns T. Computer in Language Learning. – Glasgow, 1984. – 112 p.
- 5 Carell P. et al. editors. Interactive Approaches to Second Language Reading. Cambridge Applied Linguistic Series. – Cambridge University Press, 1988. – 80 p.
- 6 Daiute C. Computers and teaching of writing // Peterson (ed.) Intelligent on computers and learning. – Reston, 1984. – P. 108-116.
- 7 Garret N. Technology in the Service of Language Learning: Trends and Issues // The Modern Language Journal. – 1991. – V.75.1. – P. 74-101.
- 8 Kodzhaspirova G.M., Petrov K.V. Tehnicheskie sredstva obucheniya i metodika ih ispol'zovaniya: uchebnoe posobie. – М.: Изд. центр «Академия», 2001. – 180 с.
- 9 Novye pedagogicheskie i informacionnye tehnologii v sisteme obrazovaniya / Pod red. E.S. Polat. – М.: Изд. центр «Академия», 2001. - 102s.
- 10 Vul' V.A. Elektronnye izdaniya: uchebnik – М.-СПб.: Изд-во «Peterburgskiy institut pechati», 2001. – 308 s.

ТҮЙІН

*Т.М. Салий, педагогика ғылымдарының кандидаты
Инновациялық Еуразия университеті (Павлодар қ.),
И.М. Макарихина, педагогика ғылымдарының кандидаты
С. Торайғыров атындағы Павлодар мемлекеттік университеті (Павлодар қ.)*

Электронды оқулықтардың жаңа буынын жоғары мектепте, мұғалімдердің біліктілігін арттыру факультетінде қолдану

Мақалада жаңа буын оқулықтарын қолдану арқылы оқыту процесін тиімді басқару үшін оқытушының іс-әрекетінің үлгісін жасау қажеттілігі сипатталады. Құрастырылған үлгі ашық түрде оқыту мақсаттарын, әдістерін, нәтижелерін ескереді. Оның көмегімен білі алушының білім деңгейінің мәселесі шешіледі. Сонымен қатар оның танымдық қызметін басқару проблемасы жойылады.

Түйін сөздер: оқыту, электронды оқулықтар, оқу процесі, жоғары білім, білімді бақылау.

РЕЗЮМЕ

*Т.М. Салий, кандидат педагогических наук
Инновационный Евразийский университет (г. Павлодар),
И.М. Макарихина, кандидат педагогических наук
Павлодарский Государственный университет им. С. Торайгырова (г. Павлодар)*

Использование нового поколения электронных учебников в высшей школе, включая факультет повышения квалификации учителей

В статье описано, что для эффективного управления процессом обучения с использованием учебников нового поколения необходимо создание модели действий преподавателя. Созданная модель

явным образом учитывает цели, методы, результаты обучения. С ее помощью решается проблема уровня знаний обучаемого. А также исчезает проблема управления его познавательной деятельностью.

Ключевые слова: обучение, электронные учебники, учебный процесс, высшее образование, контроль знаний.

УДК 544.47

А.К. Свидерский, доктор химических наук,

Д.А. Ганикель

Инновационный Евразийский университет, (г. Павлодар)

E-mail: den.ximik@mail.ru

Влияние температуры на каталитические свойства Pd-ПЭГ/ZnO катализатора

Аннотация. В данной статье представлен наиболее оптимальный температурный режим проведения реакции гидрирования на Pd-ПЭГ/ZnO катализаторе. Были исследованы работы некоторых зарубежных авторов, с целью создания катализаторов, для приготовления которых затраты энергоресурсов будут незначительными, а сама активность катализатора останется на прежнем уровне.

Ключевые слова: Pd-ПЭГ/ZnO (палладий-полиэтиленгликоль/оксид цинка), КР (крахмал), носитель, катализатор, полимер.

Теоретическая часть. Традиционные пропиточный и адсорбционный способы получения нанесенных катализаторов включают стадии высокотемпературных прокаливания и восстановления для прочного закрепления металлов на поверхности носителей и их активации. Исследователь Габор А. с сотрудниками в качестве стабилизаторов наночастиц, а также при нанесении их на оксиды для получения катализаторов активно использовали поливинилпирролидон [1]. Предлагаемые авторами катализаторы готовятся закреплением полимер-протектированных наночастиц на носитель с последующими обычными стадиями высокотемпературного прокаливания и восстановления, что приводит к разрушению полимерной оболочки и сохранению наночастиц металла на носителях. Были получены полимер-протектированные платиновые и родиевые наночастицы в мезопористом силикагеле марки SBA-15, причем SiO₂ синтезировался вокруг наночастиц. В таких условиях в одном мезопористом канале располагается одна наночастица (рисунок 1).

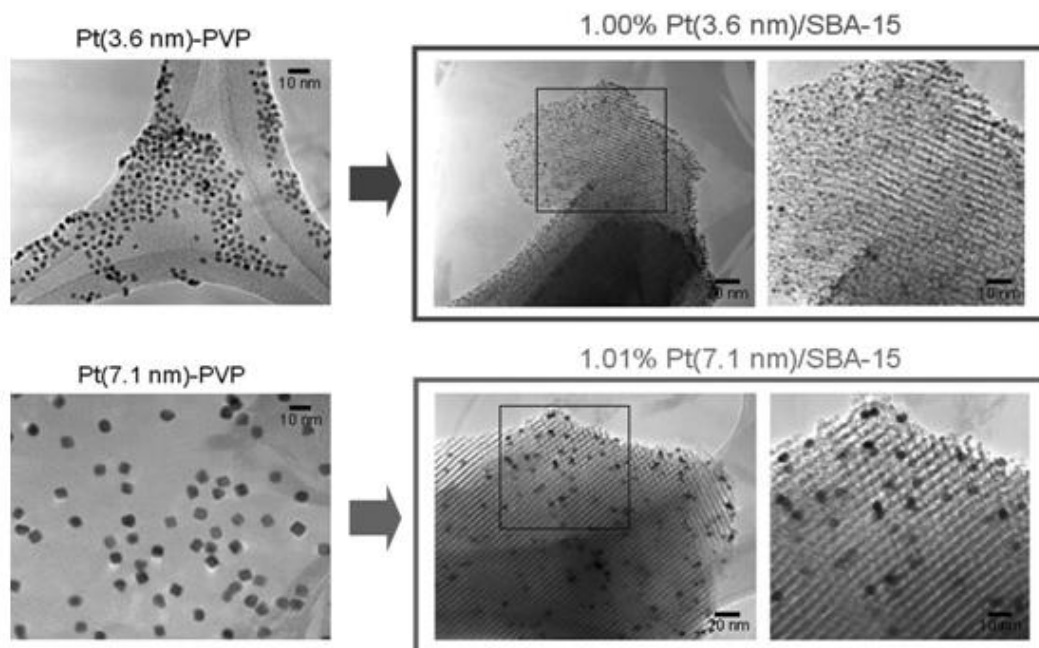


Рисунок 1 – Монодисперсные платиновые наночастицы, инкапсулированные в каналы мезопористого силикагеля марки SBA-15. Размеры частиц изменяются при сохранении общего содержания металла в катализаторе – 1% Pt