

ECONOMIC COMPONENT OF THE DEVELOPMENT OF AN EDUCATIONAL APPLICATION  
 FOR LEARNING ENGLISH

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*In the following article the stages and components of the development of an educational application for learning English are being shown and observed.*

Software tools like other industrial products have a certain life cycle. The life cycle of computer software means the period from the beginning of the development of a new software tool to its decommissioning by the consumer. The life cycle includes three stages: development (design), production (creation) and use (maintenance of software). Each stage in turn is divided into phases or stages.

**The software development stage** can be divided into the following steps:

1 *Design*. The “Design” stage includes the analysis of a technical task for development and design. At this stage, a significant period is allotted, as a high-quality design allows reducing the time spent on the subsequent stages of development.

2 *Implementation*. The stage “Implementation” refers directly to the development of a software product. This stage is the longest and requires from 40 to 60% of the total time.

3 *Testing*. At the stage “Testing”, the compliance of the result of the implementation stage with the results obtained at the design stage is checked. This stage takes up about 20% of the total development time.

4 *Revision*. At the stage “Revision”, final acceptance tests are carried out, if necessary, minor corrections to the software product are made, and the final chapters of the explanatory note are drawn up.

The following graph displays the above-mentioned program development stages:

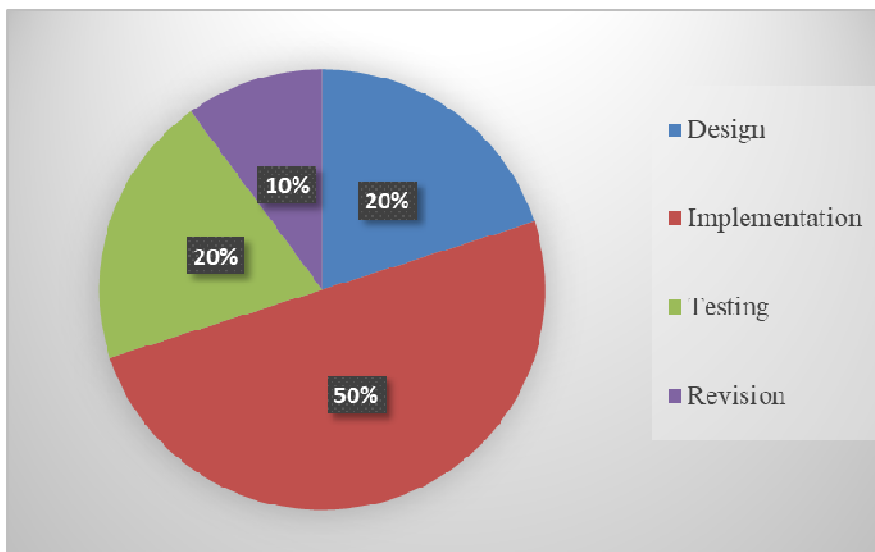


Figure 1 – Working time distribution in project development

**Types of jobs**

In addition to dividing the PS life cycle into stages and phases, there are eight types of work that can be performed in the process of creating a software product:

1 *Requirements analysis and planning*. It includes the development of specifications, analysis and modification of functional, technical, interface requirements.

2 *Designing products*. It includes the definition, specification, analysis and modification of the hardware and software architecture of the program design and database.

3 *Programming*. Detailed design, coding, autonomous debugging and integration of individual program components, as well as planning the work of programmers, developing a database, documenting individual components and organizing programming at the component level.

4 *Planning debugging.*

5 *Verification.* The process of checking the correctness of requirements, debugging products and acceptance tests.

6 *Project Management.* Planning and control of the project, monitoring and regulation of contracts, communication with users.

7 *Quality control.* Development and control, standard and technical checks of software and development processes.

8 *Documentation.* Development and adjustment of user guides and operators.

The division of the life cycle of software into stages, phases and stages, as well as a more detailed description of the work performed in the process of their development, production and operation, is necessary for a detailed determination of the costs required for these purposes.

**Calculating the cost of the product**

The cost of any product includes the cost of its creation. In this case, software.

The product is an educational application. The cost calculation should consider the following:

Expenditures:

1 *Materials and components* - consumables spent to create the product;

2 *Electricity* - since the product is an application, it uses computers that consume electricity;

3 *The basic salary of performers* - the cost of issuing salaries to employees working on the project;

4 *Additional salary* - the cost of paying premiums, risks, vacations, and so on;

5 *Deductions for social needs* - the cost of tax collection, in the fund for the protection of the population, insurance, etc.;

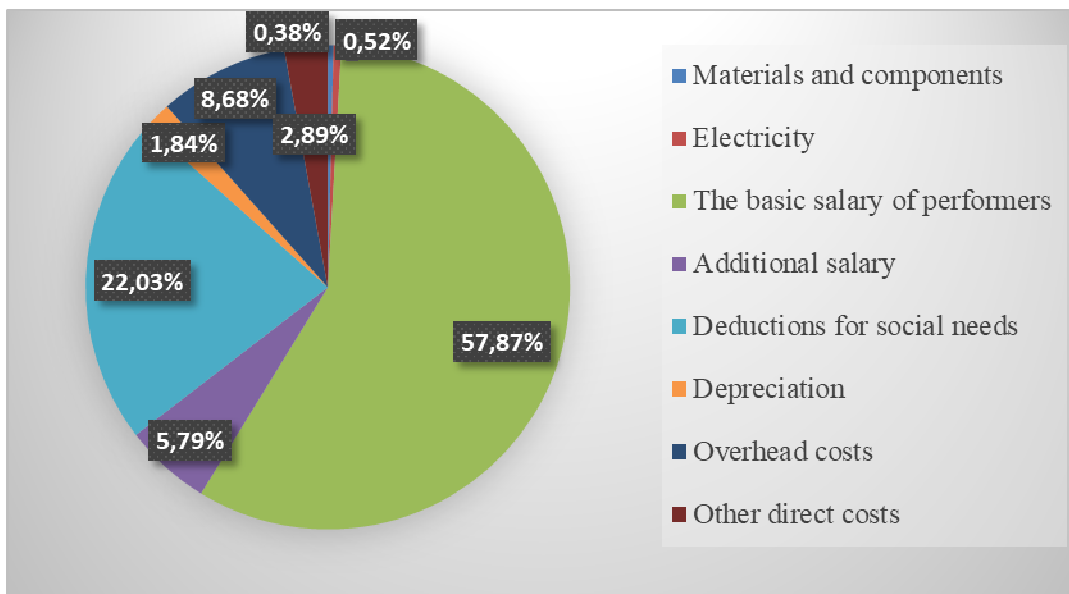
6 *Depreciation* - the cost of unforeseen circumstances;

7 *Spending on special equipment* - the costs associated with the acquisition of specialized equipment;

8 *Overhead costs* - expenses for general business needs;

9 *Other direct costs* - the cost of preparing and acquiring various kinds of information.

The impact of cost items on the final cost of the product can be seen in the diagram presented in Picture 2.



**Figure 2 – The cost structure for the development of the training application**

Looking at the diagram, we can conclude that the main costs of the product being developed, regardless of the development time, are related to the issuance of salaries to employees.

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