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ON TRAINING OF COMPETITIVE PERSONNEL - ON THE BASIS OF CREATING A NEW GENERATION OF TEACHING LITERATURE IN THE EDUCATIONAL PROCESS (in the example of mechanical science)

MAMAJANOV SHAVKAT

PhD of Namangan Institute of Engineering and Technology
Phone.: (+99894) 590 45-50

A.QAKHHAROV

Associate professor Namangan Institute of Engineering and Technology

SH.ISABOYEV

Independent researcher Namangan Institute of Engineering and Technology

Abstract:

Objective. This article presents practical research results and corresponding recommendations by creating the literature of a new generation, in the education system that should be carried out so that students become mature specialists in their chosen fields. Currently, there is a strong need to study the problems of students and professors working with educational and scientific literature in the higher education institutions. to develop some methodological recommendations based on the obtained results. This article is written as a practical expression of this goal.

Methods. Almost no research has been done in this regard. Based on this aspect, it was found appropriate to research this issue on a scientific basis, to develop some methodological recommendations based on the obtained results. This article is written as a practical expression of this goal, and it also contains a number of recommendations.

Results. Based on the above requirements, there are a lot of aspects that can be studied in foreign literature and can be used in the creation of a new generation of literature in the Uzbek language. Teaching and scientific materials would be perfectly written - all the pictures, drawings and graphs used would be colorfully described in a simple and understandable way, and each elementary part is explained in detail.

Discussions. Educational literature is created based on the priority issues of the country's development in the democratic, legal, economic, social and political directions of the development strategy and serves to further increase the intellectual potential of the schoolchildren or students, as well as advanced international experiences in the field, world science, methodology, techniques and technologies; taking into account recent achievements, development trends; Based on the above requirements, there are a lot of aspects that can be studied in foreign literature and can be used in the creation of a new generation of literature in the Uzbek language.

Conclusion: Effective organization of creating and working with literature of students and professors in the process of higher education requires a comprehensive approach to this issue. Proper organization of the teaching process, the further improvement of library activities, the introduction of innovative services that create a strong incentive for students to work with literature are directly related to the practice of publishing educational literature.

Keywords: higher education, literature, new generation, technical sciences, mechanics.

Introduction. Proper organization of education of students through creating new generation literature in higher education institutions, increasing their activity in working with textbooks and manuals is one of the important issues directly related to the quality of education. Currently, there is a strong need to study the problems of students and professors working with educational and scientific literature in the higher education institutions operating in our country, and to eliminate the identified problems. Because this issue, no matter how important it is, has been neglected for a long time.

Methods. Almost no research has been done in this regard. Based on this aspect, it was found appropriate to research this issue on a scientific basis, to develop some

methodological recommendations based on the obtained results. This article is written as a practical expression of this goal, and it also contains a number of recommendations aimed at the effective organization of this activity, the state of work of students and professors in higher education institutions with literature, its achievements and shortcomings, and using the experience of foreign countries.

Results. As a result of the research, the following positive aspects were observed in the activities of students and professors working with literature: — Students highly evaluate the activity of information libraries of higher education institutions. About 75 percent of students rate the activity of information-library centers as "excellent" and "good". More than 92 percent of the total students expressed their satisfaction with the activities of the libraries. Of course, it also has an inverse relationship with the value and other outcomes based on the students' subjective assessment. Considering that a quarter of the students are not members of the library and a third of them hardly go to the library, a certain part of the high marks given means that they are disconnected from the real relationship;

Discussions. Three quarters (75 percent) of professors inform students about newly published educational and scientific literature in their lessons. This can enrich relevant training courses with new ideas and allow students to constantly update their knowledge. On the other hand, if this practice is used in harmony with interactive educational technologies, while informing students about changes in science, it can create conditions for lectures and seminars to pass in an intense, debate-rich spirit, and lead to the expected results in improving the quality of education;

There are general requirements for the creation of New Generation literature by professors and teachers. They are:

- Educational literature is created based on the priority issues of the country's development in the democratic, legal, economic, social and political directions of the development strategy and serves to further increase the intellectual potential of the schoolchildren or students, as well as advanced international experiences in the field, world science, methodology, techniques and technologies; taking into account recent achievements, development trends;

- Preparation of educational literature on the basis of approved state educational standards, qualification requirements, and curriculum and science programs. It is desirable that the name of the educational literature corresponds to the name of the subjects in the curriculum.

When creating educational literature:

- the coherence and continuity between the educational types of the continuous education system introduced in the country (secondary special, vocational education, higher education (bachelor's, master's degree)) is ensured and unjustified repetition of subjects of subjects is not allowed;

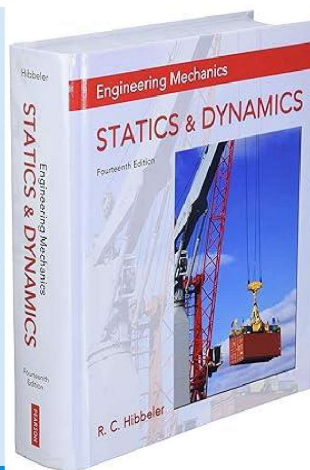
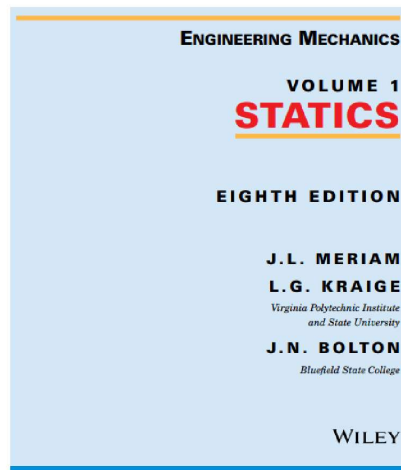
- to follow the principles of consistency of subjects, transition from simple to complex, from specific to general;

- To ensure that the content of the created educational literature is aimed at forming the skills of students and students to acquire education, independent and free thinking, gradually enriching and perfecting the acquired knowledge, independent education, searching for new knowledge from educational literature;

- Educational literature should be written in an understandable, simple and fluent language, information should be given in such a way that it is easily and effortlessly accepted by readers and students, and stored in memory, and should create an opportunity to control the knowledge and skills of students.

Based on the above requirements, there are a lot of aspects that can be studied in foreign literature and can be used in the creation of a new generation of literature in the Uzbek language.

For example, when you study the methodology of creating the literature listed below, you will see that it is perfectly written - all the pictures, drawings and graphs used are colorfully described in a simple and understandable way, and each elementary part is explained in detail.



30 Chapter 2 Force Systems

Sample Problem 2/2

Combine the two forces **P** and **T**, which act on the fixed structure at **B**, into a single equivalent force **R**.

Graphical solution. The parallelogram for the vector addition of forces **T** and **P** is constructed as shown in Fig. *a*. The scale used here is 1 in. = 800 lb; a scale of 1 in. = 200 lb would be more suitable for regular-size paper and would give greater accuracy. Note that the angle α must be determined prior to construction of the parallelogram. From the given figure

$$\tan \alpha = \frac{BD}{AD} = \frac{6 \sin 60^\circ}{3 + 6 \cos 60^\circ} = 0.866 \quad \alpha = 40.9^\circ$$

Measurement of the length **R** and direction θ of the resultant force **R** yields the approximate results

$$R = 525 \text{ lb} \quad \theta = 49^\circ \quad \text{Ans.}$$

Geometric solution. The triangle for the vector addition of **T** and **P** is shown in Fig. *b*. The angle α is calculated as above. The law of cosines gives

$$R^2 = (600)^2 + (800)^2 - 2(600)(800) \cos 40.9^\circ = 274,300$$

$$R = 524 \text{ lb} \quad \text{Ans.}$$

From the law of sines, we may determine the angle θ which orients **R**. Thus,

$$\frac{600}{\sin \theta} = \frac{524}{\sin 40.9^\circ} \quad \sin \theta = 0.750 \quad \theta = 48.6^\circ \quad \text{Ans.}$$

Algebraic solution. By using the *x-y* coordinate system on the given figure, we may write

$$R_x = \Sigma F_x = 800 - 600 \cos 40.9^\circ = 348 \text{ lb}$$

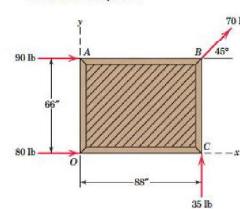
$$R_y = \Sigma F_y = -600 \sin 40.9^\circ = -393 \text{ lb}$$

The magnitude and direction of the resultant force **R** as shown in Fig. *c* are then

Helpful Hints

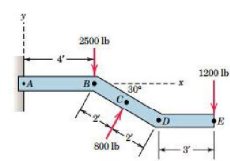
- Note the repositioning of **P** to permit parallelogram addition at **B**.
- Note the repositioning of **P** so as to preserve the correct line of action of the resultant **R**.

forces shown, determine (a) the equivalent force-couple system at **O** and (b) the points on the *x*- and *y*-axes through which the line of action of the single resultant force **R** passes.



Problem 2/90

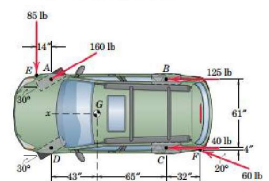
2/91 Replace the three forces which act on the bent bar by a force-couple system at the support point **A**. Then determine the *x*-intercept of the line of action of the stand-alone resultant force **R**.



Problem 2/91

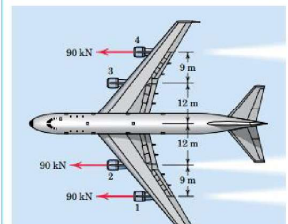
2/92 Uneven terrain conditions cause the left front wheel of the all-wheel-drive vehicle to lose traction with

Treat this as a two-dimensional problem and realize that **G** lies on the car centerline.



Problem 2/92

2/93 A commercial airliner with four jet engines, each producing 90 kN of forward thrust, is in a steady, level cruise when engine number 3 suddenly fails. Determine and locate the resultant of the three remaining engine thrust vectors. Treat this as a two-dimensional problem.



The problems used for every theme and the problems are taken close to their specialties for students of different fields, which helps the students to become mature staff in their chosen professions.

Electronic addresses of foreign literature (links):

<https://sctevtodisha.nic.in/wp-content/uploads/2021/03/Engineering-Mechanics-1st-yr-LM.pdf>

<https://www.abebooks.com/9780135770405/Engineering-Mechanics-Combined-Statics-Dynamics-0135770408/plp>

<https://www.pearson.com/en-us/subject-catalog/p/engineering-mechanics-statics--dynamics/P200000003247/9780137514724>

Conclusion: In conclusion, it is clear from the above analysis that effective organization of creating and working with literature of students and professors in the process of higher education requires a comprehensive approach to this issue. This is determined by a number of factors, such as the proper organization of the teaching process, the further improvement of library activities, the introduction of innovative services that create a strong incentive for students to work with literature, and the provision of ample space for problematic issues directly related to the practice of publishing educational literature.

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