INTERDISCIPLINARY CASE ANALYSIS OF BUDGET PRIORITIES: SPHERES AND TECHNOLOGIES

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ABSTRACT

The article considers key issues pertaining to budget priorities in social sphere viewed by education practitioners and theorists by means of case-analyses in which students work out the disputable issues and offer possible signposts for the future. The article implies that via the active involvement in the educational activity students obtain the required professional skills as well as competitive advantages in getting prestigious jobs in the financial sphere. Educators, in their turn benefit from interdisciplinary cooperation, which helps to synchronize teachers’ efforts for effectively fostering future specialists’ professional skills.


ÁNALISE DE CASO INTERDISCIPLINAR DE PRIORIDADES ORÇAMENTÁRIAS: ESFERAS E TECNOLOGIAS

RESUMO

O artigo considera questões-chave referentes às prioridades orçamentárias na esfera social vistas por profissionais e teóricos da educação por meio de análises de caso em que os alunos resolvem as questões disputáveis e oferecem possíveis sinais para o futuro. O artigo sugere que, através do envolvimento ativo na atividade educativa, os alunos obtêm as competências profissionais exigidas, bem como vantagens competitivas na obtenção de empregos de prestígio na esfera financeira. Os educadores, por sua vez, se beneficiam da cooperação interdisciplinar, que ajuda a sincronizar os esforços dos professores para promover com eficácia as habilidades profissionais dos futuros especialistas.


ANÁLISIS INTERDISCIPLINARIO DE CASOS DE PRIORIDADES PRESUPUESTARIAS: ÁMBITOS Y TECNOLOGÍAS

RESUMEN

El artículo considera cuestiones clave relativas a las prioridades presupuestarias en la esfera social, vistas por los teóricos y profesionales de la educación mediante análisis de casos en los que los estudiantes resuelven los temas controvertidos y ofrecen posibles indicadores para el futuro. El artículo implica que a través de la participación activa en la actividad educativa los estudiantes obtienen las habilidades profesionales requeridas, así como ventajas competitivas para conseguir trabajos de prestigio en el ámbito financiero. Los educadores, a su vez, se benefician de la cooperación interdisciplinaria, que ayuda a sincronizar los esfuerzos de los docentes para fomentar eficazmente las habilidades profesionales de los futuros especialistas.

INTRODUCTION

On the verge of the 2020-es society is committed to creating a sustainable world in all its spheres. Societies demand that universities become triggers for sustainable economic development in a knowledge-based economy and aim to commercialize the knowledge they generate, stating that, in addition to research and education, this is their main goal. It's well known that while education focuses on knowledge dissemination; research concentrates on knowledge creation and technology development; entrepreneurship aims at knowledge exploitation and wealth creating, including investing in business and solutions to societal and market needs. In this article budget priorities in social sphere will be considered to discuss educational case-analyses of public policy and legal regulation in the public sector in terms of financial provision of social insurance, social security & employment. The peculiarity of the research under review rests on the fact that case analyses are carried out in English.

Currently, many Russian universities are moving to at least partial study of professional undergraduate and graduate courses in English. The reasons for this are evident. No doubt, academic mobility is one of them; among other relevant items the most significant are internationalization of education and the advantage of a wider access to data base. J. G. Wissema, the Dutch scholar, advanced the theory of three generations in historic-industry-government triangle will share some of their activities with each other and this will result in knowledge-based economy, centered on creating, evaluating, and trading knowledge. Moreover, contemporary scholars and practitioners consider it important to link the content of professionally oriented academic disciplines with the study of a foreign language. At the same time, students begin to realize the prospect of mastering a foreign language with which they can work in their future career, which will contribute to successful interaction in their fields of activity.

This is where content-language integrated learning (CLIL) methods appear to be most appropriate and efficient. It refers to teaching the content of curricular subjects through the medium of a non-native language, which introduces students to the content of various disciplines and thus teaches them to apply their knowledge of a foreign language in various interdisciplinary contexts. Through CLIL approach learners gain knowledge and understanding of an academic subject or other matters while simultaneously learning and using the target foreign language (KLIMOVA, KARPOVA & KONDRAKHINA, 2019). Thus, the main method of training in CLIL is language immersion in the practice-oriented environment. Interdisciplinary links based on foreign language learning are actually the reason why it has acquired the status of a meta-subject discipline. Interdisciplinary approach focuses on interrelated and coordinated formation of communicative (linguistic) and professional competences.

In today's higher education several academic disciplines are often combined when mastering bachelors’ and especially masters' competence in analyzing relevant information, applying suitable methods and writing a thesis. In relation to finance most situations can hardly be considered without applying mathematical tools. Another item, which is an integral component of any financial analyses, is the analyses of challenging situations based on topical issues widely studied academic disciplines and offering a hoist of opportunities for discussion. Such analyses in pedagogy are widely known as case analyses or case-studies. These are used extensively at the university level, and Financial University under the Government of the Russian Federation is no exception. Educational case analyses have proved to be the most popular and efficacious technique where teamwork involving educators of multiple disciplines has proved to be the notably appropriate teaching method, as it can enhance problem solving and creativity; generate understanding, acceptance, support, and commitment (OKBA & SOLIMAN, 2006). Incorporating teamwork into content and language integrated learning is an example of multidisciplinary approach.

It's common knowledge that English has become lingua franca in all spheres of communication. Analysis of various aspects of transdisciplinary cooperation and its inextricable connection with content-language integrated learning, assessment of the students' expectations, needs and satisfaction of the results were the object of study of the authors. In this review we intend to focus on the three of the academic disciplines as most illustrative: public finance, mathematics and English.
The main subject under review in this article is the sequence of educational activities undertaken by a multidisciplinary team of educators to teach students to analyze in English cases on social issues. The main hypothesis considered in this article is that when educational analyses of cases on budget priorities in social sphere are undertaken under the supervision of a multidisciplinary team of educators, they should focus on the analyses of providing the population with public goods, financing socially significant needs and creating conditions for expanded reproduction. It should be noted that such analyses require an extensive use of mathematical tools.

The authors deduce that cases must be presented in a logical sequence (depending on the stage of training), they should gradually get bigger, from mono-cases (for one discipline) for undergraduates at the initial stage of teaching to complex interdisciplinary cases for postgraduates, which accumulate knowledge gained in several major disciplines and require a substantially wider horizon of professional competence.

This article intends to give an insight into the way foreign language learning may contribute to analyzing problem situations pertaining to budget priorities in social sphere. Its central remit is to challenge dominant stereotypes and commonly held perceptions of traditional foreign language study as well as the study of major academic disciplines (in the research under discussion - public finance and mathematics), which are still prevalent in today’s educational processes. Our choice of focus rests on understanding that throughout the world, when foreign language speakers meet in science or academic fields, they commonly use English to communicate. Common language helps them come closer and fully understand each other. Discussions on priorities in social sphere are no exception, as researchers or professionals from any part of the world thus share their ideas and experiences so as to suggest new research and work opportunities and as a result have better results (GOUGH & SCOT, 2003; ABDURAHMANOV et al., 2010). However, there are contradictions and challenges to be thought through in this article, which are as follows.

Contradictions

- Most cases used by teachers of major academic disciplines are narrowly focused and do not consider the specific concepts and possibilities of related disciplines.

- Teachers of major academic disciplines lack pedagogical and methodological competence. In real pedagogical situations, if they intend to analyze quaui-professional cases, they should use a coordinated, synergistic combination of instruction materials, such as books, articles; technology, such as software and hardware; intangible resources (e.g. knowledge, skills, experience). Such pedagogical competences as communication or classroom management are of paramount importance here (MADHAVARAM & LAVERIE, 2010).

- Often foreign language teachers lack subject competence, i.e. as a rule they experience difficulty in familiarizing themselves with the concepts in a given field and using them adequately in the context of a particular academic discipline.

- Another problem arises: because, by the end of the bachelor’s degree course, when the discipline is no longer studied, the skills developed in the initial stages of training are partially lost. For example, the skills of using mathematical tools.

Challenges

As to the language study, it should be noted that language propaedeutics is of utmost importance not only regarding the educational processes fully conducted in English, but also to undergraduate and graduate courses with only a limited number of lectures and workshops in English, usually on the most internationally significant professional matters. There are certain challenges that language propaedeutics meets. The most significant are:

- Lexis insufficiency or inappropriacy.

- Assessment in regard to several disciplines involved.

Need of mother tongue (the language of a host country) and its ratio with English.
There is no denying the fact that students can learn social and other skills that can efficiently be mastered at the lesson of a foreign language. Students also learn other skills in a foreign language educational setting, in the case under discussion the use of mathematical apparatus, linear programming, etc. The authors reflect on the ways the quality of life can be studied through content and language integrated case-analyses. However, the unavoidable interaction between a foreign language teacher (English in most cases) and a specialist in particular university disciplines, when they work in a team, calls for specific educational technologies. The answer to this challenge is CLIL technology, the essence of which lies in understanding that while learners are studying certain subjects, they are also improving their language level. The subject of this research is case analyses during public finance which are undertaken in English. The cases under discussion relate to budget priorities in social sphere and improving the quality of life which requires use of mathematical tools and encourages discussion. The study of the social relations necessary for human wellbeing and the systems by which wellbeing may be promoted offers a vast opportunity for discussion, mastering discourse and widening the horizon of social, economic and financial competence.

**Materials and Methods**

To illustrate the written above let’s consider the business game “Discussion platform THE PRIORITIES OF THE BUDGET: SOCIAL SERVICES OR INNOVATIVE ECONOMY?” designed to hold a discussion in English about the priorities of budget financing. The business game allows an educator to launch a discussion on two options: increasing the budget for social purposes or increasing the budget for economic development. The educator suggests the following Business game scenario.

Students will have to choose one of the options and justify next financial year the increase of budget funds either for social purposes or for the economic development of the territory. As a result of the business game, participants are to present an analytical report containing justification of the increase in budgetary expenses on the chosen option (Makashina, 2009). Students should use reports on the financial performance for the previous financial period and the forecast of socio-economic development for the planned period.

The analyses are carried out in four stages.

- **Stage 1** Introduction of participants into the game situation: the teacher asks students to set the purpose of the business game, to present the contents of the task and to suggest questions for discussion.
- **Stage 2**. Group work: the participants of the game split into four groups. The first group focuses on justifying the need to increase budget expenditures for social purposes. The second group supports the necessity to increase budget spending on economic development. The third group presents the interests of the population. The fourth group presents the interests of business. The groups discuss tasks and questions, prepare oral discourse.
- **Stage 3**. Conclusion and analysis of the findings: groups present rationale for the tasks set by the teacher, draw up illustrative material and reports. Teams of speakers report alternately on each issue, using multimedia materials prepared beforehand, whose presentation is followed by questions from representatives of the population and business.
- **Stage 4**. Evaluation of students’ progress is based on the results of the business game: at the end of the game students submit the texts of their presentations to their instructor who sums up and evaluates the students’ activity considering the contents of their presentations, rationale for the prepared public address, its logic, the level of knowledge and preparedness of each student.
Issues under consideration:

1. Social policy priorities (CASTANEDA, CHAVEZ-J UAREZ & GUERRERO, 2018): how to improve the quality of life?
2. Priority areas of Russia’s innovative development: how to allocate budget expenditures today to increase revenues to the budget tomorrow?
3. What is needed to improve the efficiency of budget policy in the field of spending on the innovative economy and social sphere?

Business game “RATIONALE FOR THE CHOICE OF THE TYPE OF BUDGET POLICY IN THE REGION”

The business game is set in the form of a group discussion with elements of a simulation game.

- Stage 1. Introduction of participants into the game situation: the teacher defines the purpose of the business game, sets the task and suggests questions for discussion.
- Stage 2. Group work: the participants of the game split into groups. (the number of the groups must be even; the number of groups depends on the total number of students). The groups discuss tasks and questions, prepare speeches.
- Stage 3. Conclusion and analysis of the findings: groups present rationale for the setting suggested by the teacher,
- Stage 4. Evaluation of student’ progress in accordance with the results of the business game: at the end of the game, students submit the texts of their presentations to the instructor, taking into account the content of which s/he sums up and assesses the students’ activity. At the same time, the instructor evaluates the rationale for the presented material, the logic of the presentations, the subject matter competence and the quality of the illustrative materials.

The aim of the business game is to provide students with practical skills to justify the choice of budget policy options in the region and the ability to detect factors that negatively affect the replenishment of the budget revenue, and to determine the main areas of improving the efficiency of budget spending. Business game objectives:

- in a game form to determine the regional budget formation features, depending on a particular type of budget policy, taking into account the development priorities of the state (CHEN, LV & LIU, 2019);
- to learn how to work as a team while justifying a particular type of budget policy;
- to acquire skills of creativity, active participation in the discussion, forming one’s own position during the discussion of budgeting issues;
- to be able to defend one’s own position on the basis of evidence-based arguments in accordance with economic logic, taking into account the conditions and peculiarities of regional finance.

Task contents.

The revenue policy is aimed at maximizing financial revenues to the budget from existing sources, as well as ensuring the continuous expansion of the range of these sources. The spending policy is aimed at optimizing the use of previously mobilized financial resources to meet the needs of society as fully and expeditiously as possible. One (two) group of students develops arguments for income policy, the other two - in favor of spending policies. One of the students acts as the chairman of the regional government, to which each group must justify its position. Income policy proponents consider the following options:

- improving the efficiency of municipal property management;
- increasing the level of responsibility of the chief revenue administrators for the implementation of the planned indicators of revenue;
- improving the quality of administration of tax and non-tax revenues of the budget (KEEN & SLEMROD, 2017);
- continuing work to reduce the debt on taxes and fees credited to the budget;
- increasing the tax base, including continued work on the formation of land plots for apartment buildings, registration them as communal property;
Proponents of spending policies consider the following options:

- improving the efficiency of budget expenditures (SOLYANNIKOVA, 2013), optimization of municipal procurement included;
- the further optimization of budgetary institutions network;
- reduction of the number and the expenses on the maintenance of local governments, including elimination of duplication of the functions performed;
- other options.

**Discussion questions**

Which budget policy (income policy or spending policy) do you think has the strongest regulatory effect and why?

The peculiarity of the above interdisciplinary case analyses is that they involve decision-making. Furthermore, decision-making is carried out in English, thus realizing the strategy of switching from learning a foreign language to learning academic subjects in English. Discussion in such case-analyses is of paramount importance. On the one hand it is an excellent means of evaluating opportunity costs and tradeoffs, on the other hand – they are an excellent opportunity to master English for professional purposes via engaging in quasi-professional activity. In most cases reasoning is supported by the calculations and modelling economic processes.

When setting the task, the teacher can recommend that students use their skills from various disciplines that they have studied according to their level. It is necessary to demonstrate examples of the application of mathematical tools, such as the simplex method for solving linear programming problems, the study of functions of several variables, the Leontiev model, and other methods of optimal solutions. It is recommended to perform calculations, when processing large amounts of data using software packages, for example, “R”, which students of the Financial University have been studying since the first year, and, of course, EXCEL (BERSHAKOVA, PLESKUSHKINA & SYZONENKO, 2015). An effective tool for analyzing the economic development of a country and a region is inter-industry balance (IIB). This is a set of interrelated tables characterizing the relationship between output in one industry and costs, expenditure of products of all participating industries, necessary to ensure this release. When considering this model, the following basic formulas are used:

\[ X = (E - A)^{-1} \cdot Y \]  
- Interindustry balance equation,

\[ A \] – Leontiev’s matrix,

\[ E \] – identity matrix,

\[ (E-A)^{-1} \] – total cost matrix,

\[ X \] – gross output vector,

\[ Y \] – end product vector.

At the same time, the IIB models built based on the Leontiev’s matrix do not allow estimating the increase in GRP by branches of the economy. This is because the full cost matrix is a gross product multiplier, not a revenue multiplier. This is clearly not enough for the most complete assessment of the economic development of the region. To most fully analyze the situation that has developed in the sectors of the national economy of modern Russia, it is necessary to use a new model of interindustry balance. This model is based on a total cost matrix, which, in addition to direct material cost factors, also includes household spending by industry. Based on the inter-industry balance of total expenses (IIBTE) and the industry income multiplier, it is possible to calculate the multiplier effects in the economy. Household income and expenses are proposed to be considered in a sectoral context. To demonstrate the effectiveness of this method, it is necessary to calculate indicators at the regional level. As an example, an analysis of the situation in the Central region of the Russian Federation in 2006 is presented.
Case analysis

Draw up the balance sheet (Table 1), on the basis of which it is possible to construct a matrix of direct cost coefficients of products.

**Table 1.** Balance table “input-output”

<table>
<thead>
<tr>
<th>Leading industries of the Central region</th>
<th>Current production consumption in industries</th>
<th>Gross output</th>
<th>Gross value, %</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>6737463</td>
<td>563017</td>
<td>35,5</td>
</tr>
<tr>
<td>2</td>
<td>457085,1</td>
<td>7268492,9</td>
<td>35,5</td>
</tr>
<tr>
<td>3</td>
<td>17643,1</td>
<td>2569594,3</td>
<td>17,0</td>
</tr>
<tr>
<td>4</td>
<td>56301,7</td>
<td>3803467,8</td>
<td>13,1</td>
</tr>
</tbody>
</table>

**Source:** Search data.

1- wholesale and retail

2- manufacturing

3- real estate operations, rental and provision of services

4- transport and communication

Further, using the resulting table, it is possible to find the multiplier of the total internal material costs

\[ M_c = (M_c) \]

\[ M_{cj} = \sum_i Q_{ij} \]

where \( Q_{ij} = (E - A_d)^{-1} \) – matrix of total material costs of domestic products.

At the core of the proposed model, it is necessary to summarize production and consumer costs. When using the new multiplier model, the column vector of household consumption \( C = C_{ij} \) is converted to the consumption matrix \( F = F_{ij} \). Based on the data obtained, it is possible to compile a table based on data from the matrix of household consumption coefficients of domestic products (Table 2).

**Table 2.** Household consumption matrix of domestic products

<table>
<thead>
<tr>
<th>No.</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>20570,59</td>
<td>172607,6</td>
<td>230620,8</td>
<td>24572,8</td>
</tr>
<tr>
<td>2</td>
<td>100733,4</td>
<td>53410,16</td>
<td>54279,73</td>
<td>13763,4</td>
</tr>
<tr>
<td>3</td>
<td>552,57</td>
<td>475,81</td>
<td>8436,33</td>
<td>131325</td>
</tr>
<tr>
<td>4</td>
<td>866,46</td>
<td>996,89</td>
<td>234161</td>
<td>638,63</td>
</tr>
<tr>
<td></td>
<td>Amount</td>
<td>127223,02</td>
<td>233730,46</td>
<td>295678,47</td>
</tr>
</tbody>
</table>

**Source:** Search data.

1- wholesale and retail

2- manufacturing

3- real estate operations, rental and provision of services

4- transport and communication

In order to find the total volume of household consumption of products of the i-th industry, it is necessary to summarize the consumption of these products by households that receive income in various industries:

\[ C_i = \sum_j F_{ij} \]

Next, enter the matrix \( P \), the elements of which are the consumption coefficients \( P_{ij} \). \( P_{ij} \) is determined by dividing household consumption of products of the i-th industry, generating income in the j-th industry by the \( X_j \)-gross output of the j-th industry:

\[ P_{ij} = \frac{F_{ij}}{X_j} \]
Based on the calculated indicators, a table is compiled based on the data of the matrix of household consumption coefficients of domestic products (Table 3).

**Table 3. Matrix of household consumption factors of domestic products**

<table>
<thead>
<tr>
<th>No.</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.002</td>
<td>0.02</td>
<td>0.3</td>
<td>0.033</td>
</tr>
<tr>
<td>2</td>
<td>0.008</td>
<td>0.04</td>
<td>0.043</td>
<td>0.01</td>
</tr>
<tr>
<td>3</td>
<td>0.001</td>
<td>0.012</td>
<td>0.02</td>
<td>0.029</td>
</tr>
<tr>
<td>4</td>
<td>0.0002</td>
<td>0.00023</td>
<td>0.0005</td>
<td>0.00034</td>
</tr>
</tbody>
</table>

**Source:** Search data.

1. wholesale and retail  
2. manufacturing  
3. real estate operations, rental and provision of services  
4. transport and communication

Then, the system of equations $X = A \cdot X + Y$ is converted to:

$$X = A \cdot X + P \cdot X + Y^*,$$

where $Y^* = (Y - C)$ — is the column vector of final consumption minus household consumption. After a series of transformations it turns out:

$$X = (A + P) \cdot X + Y^* = B \cdot X + Y^*,$$

where $B = (B_{ij})$ — is the matrix of total expenses, in which the elements of which $B_{ij}$ are the coefficients of the total costs $Y$ of products of the $i$-th industry on the production unit of the $j$-th industry.

Then the multiplier of the total costs of domestic products is calculated:

$$M_e = (M_{ij}), \quad M_{ij} = \sum_i S_{ij}.$$

The following conversions are performed:

$$Y^* = X - B \cdot X \Rightarrow Y^* = (E - B) \cdot X.$$

The final result is gross output, which is equal to:

$$X = (E - B)^{-1} \cdot Y^*,$$

where $(E - B)^{-1}$ — is the matrix of total total costs, similar to the matrix of total costs of V. Leontyev.

The most important task is to determine the revenue multipliers $(K_m)$. The classical Leontiev’s model does not provide such an opportunity. The multiplier model, based on the matrix $(E - B)^{-1}$, is supplemented by a special factor - the vector $R = (R_j)$ the share of income in the gross output of the $j$-th industry. Thus, the share of income in the gross output of the $j$-th industry is equal to:

$$R_j = I_j - \sum_i A_{ij},$$

where $I = (I_j)$ — is the unit vector row, all of whose coefficients are equal to unity, $A_{ij}$ — are the direct material cost coefficients of the products of the $i$-th industry for the production of a unit of production of the $j$-th industry. Using the vector $R$ allows us to isolate the newly created value from the gross output and calculate the growth of gross domestic product by industry.

The multiplication of the vector $R$ and $(E - B)^{-1}$ is the multiplier $K_m$:

$$K_m = R \cdot (E - B)^{-1},$$

where the elements of the vector $K_m$ show the growth of GRP by sectors of the economy, which makes it possible to order the sectors by the maximum increase in gross regional product. Thus, the action of the animation mechanism was considered on the example of leading industries. The data are shown in Table 4:
Table 4. Multipliers of gross product and industry income.

<table>
<thead>
<tr>
<th>Sectors of the economy</th>
<th>$M_c$</th>
<th>$M_t$</th>
<th>$K_m$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wholesale and retail trade</td>
<td>183</td>
<td>2.87</td>
<td>154</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>2.37</td>
<td>3.21</td>
<td>150</td>
</tr>
<tr>
<td>Operations with real estate; rental and provision of services</td>
<td>147</td>
<td>2.57</td>
<td>145</td>
</tr>
<tr>
<td>Transport and communications</td>
<td>177</td>
<td>2.83</td>
<td>142</td>
</tr>
</tbody>
</table>

Source: Search data.

Thus, during the research, the following conclusions can be drawn:

- firstly, the new model allows you to calculate the real volume of gross regional product in its industry-specific context;
- secondly, the new model contributes to the development of methodology in the development of solutions to increase economic growth in the region;
- thirdly, this method allows you to develop a structural analysis and forecasting of regional socio-economic development.

Particular attention when setting the final score should be given to the use of the mathematical apparatus in the argumentation of their findings, the use of IT technologies. It is important that students not only get some numerical result, but give it a critical interpretation. The issues raised are, firstly, the interrelationship between the two disciplines involved and their ratio. Secondly, the approach to progress evaluation should be considered with the view to difference in holistic and competence approaches to assessment. Thirdly, researchers stand to choose which of the modern teaching technologies could be applied and to what extent. Yet another problem concerns the need for language as well as mathematical propaedeutics, which are themselves a subject matter of a separate research (Dubinina, Nikolaev & Stepanyan, 2018a).

Of special interest are the situations in which the educational process is based on dual language instruction in which students master academic disciplines, whose content is taught and assessed in two languages: English as *lingua franca* on the one hand and the native language or the language of the host country on the other hand, which is doubly true if it refers to international students. The authors’ practical experience shows that international students when their preparatory course is conducted through dual-language instruction demonstrate higher academic performance than their peers in single language training.

The ratio between the two languages requires special consideration and depends on a particular composition of the student’s groups. Students have a very diverse level of proficiency in English: some of them know English well enough to study academic disciplines in English, but lack mathematical skills and the knowledge of terminology. Other students know the language of the host country (e.g. Russian) enough to communicate in everyday life, but not enough to study academic disciplines, especially those that require a lot of mathematical calculations (e.g. in public finance, the cases pertaining to amounts of money the government pays out to people in need: unemployment benefits (also known informally as the dole) disability allowances, and student grants (to help pay for studying); or on social security risk analyses or risk management), let alone those students, who know neither English nor the Language of the host country. Poverty, unemployment, dependent children, family instability, inadequate health care, and the needs of the elderly have always been the subjects of heated discussions in the society and are studied in the educational process as the most important targets of social welfare policies.

Therefore, the authors further a hypothesis that dual language instruction appears to be exceedingly efficient when several academic disciplines combine. Moreover, multidisciplinary approach is especially fruitful when it concerns training students at the faculties providing instruction in English as a foreign language. Admittedly, the language of mathematics consists mostly of signs and symbols and is carefully and purposefully designed. It is precise, concise and the same all over the world, although the users in different countries convert it into their spoken language. Furthermore, the language of mathematics is cross-disciplinary, it is used in various sciences: Economics, Finance, Statistics, Risk Analyses, Investment Management, and so on (Dubinina, Nikolaev & Stepanyan, 2018b). Thus, we may speak about multiliguality.
The purpose of the current research is to develop methodological approach which will help both students and educators to combine several academic disciplines. Moreover, educators cooperate in choosing the materials for case analysis and such interdisciplinary cooperation is undoubtedly efficient. It should also be born in mind that content subjects are taught in a language that is not the mother tongue of the learners (KLIMOVA, KARPOVA & KONDRAKHINA, 2019). Elaine Nevin (2008), a researcher from Ireland, states that good quality education is crucial for attaining a more sustainable world.

This research frames the reasons for the main contradictions and challenges and suggests ways to meet them. The key findings belong to the following categories.

1) Language
In the authors’ perception the main problems in the linguistic sphere arise due to the following reasons.

a. lack of academic words
Specific academic terms are often terra incognita for undergraduates. However, they need to master them if they intend to get a degree. According to Pat Thompson (2011a), a British researcher, proper academic vocabulary is ‘tools of the trade’ and students should not only use the relevant vocabulary in their discourse on academic matters but also be able to translate researcher-talk into plain language in order to discuss their work in other contexts.

b. limited number of discipline-specific words
Another challenge lies in the fact that each discipline has a dedicated terminology. If you study Finance then words like budget, income, expenditure, debt, capital, interest, credit, default, and so on, are a basic lingua franca. Most non-economists understand what these terms mean, as they are widely used outside of the discipline. But when students get absorbed into Public Finance, they will need more specific terms, such as compulsory levy, contingency reserve, delinquency lags, distortions in incentives, exemption limit, gross receipts, cash flow, venture, fraud, etc.

And the same goes for every discipline. When postgraduates are doing their master’s or PhD, there will be many more terms and concepts for them to master so that they could conduct “an ‘insider’ conversation in the professional community using this technical disciplinary lingo” (THOMPSON, 2011b). If you study Mathematics, basic lingua franca words will be target function, system of equations, rules for finding a derivative, equation coefficients, discriminant of a square equation etc. However, students gradually immerse into Mathematics and need advanced terminology, e.g. simplex method, least square method, characteristic equation, eigenvector and eigenvalue of a matrix, conditional extremum, etc.

Mathematics is a third language for handling different matters. This language is mostly in the form of mathematical symbols. What is more, symbolic language is one of the basic characteristics of mathematics. Undeniably, mathematical symbols make it possible to realize concise, clear representation of complex ideas. One of the chief reasons why mathematics is based upon the use of symbols is that the literal notation is free from ambiguities of words. For foreign students, whose knowledge either of English or the language of the host country is insufficient, the language of mathematical symbols turns out to be very helpful in the educational process. At the beginning of studies, it often dominates in the hierarchy of means of communication, before the mastery of the Language for Specific Purposes (LSP), namely Finance and Economics, is completed.

c. misuse of collocations
Collocations, or a group of two or more words that usually go together, are one of the main challenges English learners have to face. Collocations have to be learnt carefully so as not to be confused and hence confusing for interlocutors. The most commonly misused collocations are with the verbs make and do. For instance:

- make a business deal/BUT do business with someone

2) Assessment in regard to several disciplines involved
Collaborative teaching helps students benefit from combining several disciplines, which result in stronger motivation. Still, team teaching demands a comprehensive, balanced assessment. Applying two-dimensional assessment strategies may be a way out: criterion-referenced assessment for subject-matter competence (public finance and mathematics), and holistic approach for assessing the language ability.
One of the primary objectives in analyzing budget priorities in social sphere is to keep students informed about the major challenges. As has already been inferred, case-analyses, business games and role-plays as technologies of active methods for teaching and learning require compulsory interaction of a foreign language teacher and a specialist in this field. Materials for case analysis are selected in close cooperation, considering their importance for a particular discipline. Such interdisciplinary cooperation is one of the most significant results of the activity. While immersing into the problems under consideration students involve themselves deeply in determining priorities of social policy first and foremost to ensure the economic security of the country. The choice of certain social strategies should occur on the one hand to increase budget revenues, on the other hand to prevent the decline in the standard of living of the population to the maximum low values, which can cause social tension.

Cases are a powerful method in teaching future specialists English for special purposes since they enrich learners not only with the skills of using the language in quazi-professional context, but they also empower them with the ability to master academic disciplines in English and supply them with the ability of solving professionally oriented problems. Having analyzed the suggested cases and taking part in the business games students will learn that one of the main criteria for assessing the economic security of the country is social stability - an indicator of the ability of the state or the government structures to prevent the emergence of conflicts and to timely settle them down between the subjects of social interaction, to create a reliable mechanism of realization and protection of interests. Students thus realize that present day university graduates must master these competencies.

No doubt, there are lots of factors which should be considered while involving students in doing a case study. In determining the goal of the economic security strategy of the Russian Federation, ensuring the level of economic development ranks first, to create acceptable conditions for the life and development of an individual, socio-economic, military, and political stability of the society. This, in turn, will help to preserve the integrity of the state, successfully confront the influence of internal and external threats.

Critical thinking is one of the skills that are part and parcel of case analyses. For instance, while analyzing one of the problem situations above students concluded that today, unfortunately, the programs of social transformations are declarative in nature, and are not sufficiently aligned with the financial capacity of the state. Moreover, the pace of reform in the social sphere is not coordinated with the real incomes of the population. Deciding, the participants of the business game advance a proposal that the issue of ensuring economic security based on the certain social strategies can be used by the relevant authorities to form a mechanism for ensuring security at various levels.

Yet another suggestion is that to improve the effectiveness of the social strategy, it is essential to return to the practice of social planning and the development of social programs based on long-term multi-variate national economic forecasts. Strategic planning of the social sphere at the federal and regional levels will here be consistent with reality. Thus, it can be concluded that the purpose of mastering the competence of developing a mechanism for the implementation of social strategies should be to provide social guarantees with clear and understandable mechanisms for their implementation.

For obvious reasons at English workshops language teachers cannot use very long and complicated cases which demand deep specialist knowledge and quite a lot of time for preparation However, all the cases and business games require problem-solving or decision-making. This technology, on the one hand, provides learners with useful, additional information, and on the other hand, teaches them to analyze, systematically extract information from, or otherwise deal with data, e.g. Big Data, fostering information literacy with the purpose of making correct solutions. In doing a case the English language is both a tool to solve a problem and a means of communicating in business situations. Learners acquire skills how to present their point of view, discuss its importance and suggest a course of action competing and demonstrating their analytical and managerial skills. Used extensively case studies undoubtedly make the teaching process more effective and student centered. A case study method is highly effective because it does not only enhance developing communicative productive and receptive skills in all areas of language learning, but its aim is to help students acquire professional communicative competence which is the overall purpose of teaching a foreign language (KONDRAKHINA, PETROVA & STAROVEROVA, 2015).
**CONCLUSION**

In doing a case the English language is both a tool to solve a problem and a means of communicating in business situations. Learners acquire skills:

- to extract, accumulate and systemize information;
- to present their point of view, discuss its importance and suggest a course of action;
- to apply mathematical tools;
- to apply critical thinking to solving problems
- to make decisions

Having considered the ways of increasing the effectiveness of teaching both terminology in English and developing professionally oriented communicative competence can be an intensive use of interactive innovative techniques. Role-plays, business games, case studies, group discussions, conferences, round-table talks, use of information technologies are significant in building students’ professional knowledge and skills. To conclude, via the active involvement in the educational activity students obtain the required professional skills as well as competitive advantages in getting prestigious jobs in the financial sphere. Educators, in their turn benefit from interdisciplinary cooperation, which helps to synchronize teachers ' efforts for effectively fostering future specialists' professional skills. Teaching different disciplines at all levels of higher education should be integrated and continuous, so that students might understand how to use Economics, mathematics, IT and language skills for a comprehensive solution of professional problems.

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