



The financial literacy assessment among students majoring in the field of finance

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Abstract

The importance of the study is determined by the need of expanding requirements for financial literacy in regard to continuing changes and development of the financial landscape, and the increasing digitalization in economy and finances, as well as considering the EU Directive 2016/97 which regulates the level of financial competence for insurance companies employees engaged in the preparation and distribution of insurance products, as it may affect the recognition of Russian insurance market professional qualifications from abroad. On the other hand, besides the importance of consumer spending on insurance, there are too few tests among the financial literacy control and measurement tools for assessing the insurance risk and guidelines for personal insurance portfolio management. In this regard, the article aims to determine the level of financial literacy among students majoring in the field of finance and to analyze the factors contributing to its improvement. On the theoretical level, the study explores the principles of systematic education to form financial knowledge and competence. The empirical study reveals interests of students as future consumers of insurance services making their choice of insurance products on the base of their functional financial literacy. Principal methods for the study of the problem are: the theory of systems, the concept of feedback, a method of comparative analysis, and also works of Russian teachers and methodologists in the field of systematic management in education, which allows reasoning the continuous and consistent character of financial knowledge and competence. The article presents the results of theoretical analysis concerning the development of functional financial literacy among students who major in finance. It identifies the main gaps in their knowledge and competence in the field of insurance, and special features of students' interests as future consumers of insurance services. The article gives reasons for making changes in the bachelor's training program related to insurance, as well as in the methodological guidelines for the educational process. The materials of the study are of practical value for educational institutions of higher financial education and for the executives of Russian insurance companies.

Keywords: feedback principle, professional qualification, risk assessment, financial education, academic majors

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INTRODUCTION

In Financial knowledge and skills become important for the citizens of Russia. The combination of financial knowledge and skills has been called financial literacy, which, essentially, is a component of functional literacy. Development and increasing of financial literacy is an educational process and part of the national strategies in different countries. Issues of financial literacy and financial education have become increasingly important in Russia in respect of the rapidly changing landscape of digital innovations and advanced technologies in various sectors of the financial market, greater access to financial markets instruments, and new pension plans with a significant participation of the working population.

The national strategy on improving financial literacy for the period between 2017 and 2023 highlights the shortcomings of previous measures to improve the financial literacy of Russian citizens (The decree of the Government of the Russian Federation dated 25.09.2017, N. 2039-R). These include the following: fragmentary basic teaching of financial literacy, lack of available educational programs and testing tools resulted in the non-cohesive perception of the financial market, the inability to effectively manage personal finances and consciously choose financial services (Gryzenkova et al. 2016). In order to optimize the

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process of improving financial literacy, the obligation to develop control and measurement tools for assessing the acquired knowledge, as well as regular testing of the basics of financial literacy has been set by law in the framework of educational programs, including those in higher education institutions, and in the frame of introduction of financial literacy courses into educational practice.

The relevance of the study is emphasized by the fact that the financial culture in Russia is characterized by a low level of financial discipline and risk responsibility for one's own choice or use of financial services and tools. Thus, the most people in Russia, including students of finance specialization, consider as acceptable to exaggerate the amount of claim to insurance company in the occurrence of an insured accident, conceal information when making the insurance contract, falsify facts and cheat. The state of things requires to change approaches to financial literacy programs, to analyse feedback data and various pedagogical methods in order to develop responsibility in financial relations.

Applying systematic principles in the educational process, including financial literacy programs, will facilitate achieving the expected results on the basis of interdisciplinary concepts, taking into account organizational continuity and sustainable communication links.

Kelle and Sadovsky (2002) offered an idea of applying the methodological basis of a systematic approach to form interdisciplinary concepts aimed to solve multiple topical problems, which combines the knowledge and experience of various sciences from human sciences to technology. In accord with the basic provisions of the systems theory, an object (a system) is a conglomeration of interrelated parts, has a goal and is open to feedback from the environment. Functioning and development of complex objects (systems) is subject to certain laws and principles (Ludwig von Bertalanffy 1950). The applicability of the laws and principles of the system theory is sufficiently universal. However, some complex social systems, such as Pedagogy, dynamic in the integral, functional, structural and component aspects, are characterized by the specificity of their dynamic structure and stable functional dependency, forming its objective and specific laws (Legenky 1979). Many outstanding Russian educators were and are of the opinion that there are some specificities in the teaching process. Arhangelsky (1976) emphasized the interrelation between educational and mental activities formed in the student-teacher environment, where each of the participants forms various information flows, which based on their individual efforts to solve various problems of learning or teaching activities (Arhangelsky 1976).

At the same time, all pedagogical practices are inherently systemic and characterized by: flexibility, dynamism, variability, adaptability, stability,

prognosticability, continuity, integrity. These properties correspond to the systemic principles, such as semiotic continuity or changeability of the system simultaneously with its environment; the principle of feedback or the principle of reverse afferentation (Anokhin 1970), assuming the reaction of the object to the behavioral act; the principle of organizational continuity (Bogdanov and Tektology 1989) or openness of the system to the element-wise or complex modification; the compatibility principle or a qualitative or organizational relative homogeneity; the law of requisite diversity or the proportional variety of management tools affecting the growth of diversity of the system (object), etc.

For the purposes of this study, there are applied the principles of feedback and the principle of organizational continuity of educational practices. According to the Atkinson-Shiffrin three-components model, the feedback principle is an important component of successful controlling of both the system elements and the system as a whole. In order to change the object of pedagogical activity and take it to another level of development, a gradual change in the state of the object is necessary: from the elementary educational level to the following as resultant. The effectiveness of the impact on the object can be negative or positive. For the pedagogical system, a significant gradation of resultant states is effective and allows to develop individual measures of correction, depending on the degree, and facilitate self-improvement of the object of pedagogical activity. The fundamental task of the educational process is goal-setting - to achieve the level of knowledge, skills and competences as planned. Hence the principle of feedback facilitates the translational advance of the system towards the goal (Tishchenko 2010). In the process of absorbing information, the human brain makes decisions, while using variability (adjustable by feedback) in order to choose the right decision from the set.

The feedback principle interacts with other systemic principles. For example, the interchange of information allows to build a hierarchy of knowledge, especially in the field of financial literacy; or the principle of unity allows to obtain the integrity of the financial knowledge system through feedback; the principle of continuous development involves the development of both individual parts of the educational system and all systems as a whole. The systemic principle of continuous development in pedagogical practice can be considered as implemented in the slogan "permanent education", in the financial sphere especially, reflecting the changes in the environment and forming new elements of the educational system, such as permanent professional education. In accordance with the EU Directives and professional standards, permanent professional education affects insurance intermediaries and actuaries - important subjects of the insurance market considered as a segment of the financial market.

Based on the above theory and methodology, the authors conducted a study at the Financial University, which demonstrates the level of financial literacy among students of finance (insurance) specialization, the reasons for its low indicators, as well as ways to improve it.

The Main Indicators of Financial Literacy and Elements of the Bachelor's Educational Program of Finance Specialization

In the middle of the first decade of the 21st century, the problem of financial literacy arose due to the increasing complexity of financial products in various segments of the financial market. To date, the problem has been transformed from national to global, and its development requires feedback, on the one hand, and application of the principles of variability, continuous development, updating of goal-setting, developing of common terminology, using of various control and measurement tools, on the other hand (Annenkova and Kamneva 2011, Khusainova et al. 2018). Financial literacy as a result of the educational process includes setting (the culture of financial behavior), knowledge, abilities, skills (Alifanova and Evlahova 2012). The principal provider of financially literate individuals are institutions of higher education specializing in finance. Graduates with finance specialization not only join the ranks of financial market professionals, but they are also guides of financial culture in their social networks: in family, among relatives, friends, colleagues and others (Annenkova et al. 2011).

The concept of financial literacy reflects discretely in a particular segment of the financial market. Thus, for the banking segment, it is important to understand credit relations, the interest rate formation, the system of interaction with banks for accumulation of funds or loan repayment, as well as for making decisions on investing funds. The insurance market requires knowledge about the insurance risk, insurance products, mutual responsibility system for participants of the insurance contract, the retirement insurance system for the purpose of pension schemes, the investment of accumulated funds, etc.

Financial literacy involves improving of the level of financial knowledge not only for individuals using the services of the financial market, but also for financial market players and their employees. For example, on the insurance market, the constant dynamics affecting the range of insurance products, as well as indicators for their assessment, and comprehension of the stability factors affecting insurance companies, as well as the digitization of all business processes, must be taken into account. It necessitates continuous updating of educational and training programs, improving professional skills, increasing the level of language training, in order to compare the national and international systems to assess the quality and suitability

of insurance services, consumer protection, requirements for the insurance company, etc. (Kirillova and Tsyganov 2015). For example, according the EU Directive 2016/97, employees of European insurance companies involved in the development and distribution of insurance products are required to improve their skills annually, spending 15 hours per year (The EU Directive 2016/97 dated 20.01, 2016).

At the same time, the financial literacy programs, as well as control and measuring tools do not include practice-oriented models based on real events and facts. Leontyev (2003) defined a functionally literate person as an individual able to use permanently acquired knowledge to cope with the widest possible list of tasks in various spheres of human activity. Hence, functional literacy as a combination of various skills and abilities may include financial literacy (Kovaleva 2017). Upon that, functional financial literacy should include not only skills, competences, but also confidence to make effective decisions. The practice of testing the level of financial knowledge of individuals, as a rule, is focused on standard questions and tasks that are abstract and affects rather narrow areas of the financial market. At the same time, there is no feedback from respondents in terms of complexity/simplicity of questions, importance of directions, targets, etc. In addition, there is no continuity in improvement of financial education and financial literacy, which could be encouraged by a step-by-step testing system and the issuance of a certificate to confirm the obtained level of financial literacy.

METHODOLOGICAL FRAMEWORK AND METHODS

Our Assessment of Financial Literacy among Students Majoring in Finance

In order to improve financial educational programs - "Insurance", in the Financial University under the government of the Russian Federation in 2017 an experiment was conducted on the methodology of teaching major disciplines considering changing of the ratio between lecture and seminar hours, wider using online technologies, attracting practitioners to the educational process in major disciplines, etc. In accord with the educational program Economics, academic major Insurance, students studied during 3 years the following subjects (financial and economic): Life safety (Civil Defence), Legal regulation of economic activities, Further mathematics, Optimal decision-making, Basics of financial calculations, Probability theory and Mathematical statistics, Money, credit, banks, Statistics, Finance, Econometrics, Economic theory, Economic analysis, Corporate Finance, System analysis and modeling, Insurance, Financial markets, Reinsurance and International insurance market.

The semestrial experiment was completed by questioning the students engaged. 39 students of the

Table 1. Fragment of the questionnaire testing the knowledge of students of the 3rd year, Economics, academic major Insurance

Important aspects of insurance	Questions	Answers
Insurance products	What kinds of insurance products are needed in everyday life?	Prevail - health insurance, motor vehicle insurance, liability insurance; not mentioned - cumulative life insurance
Insurance products	How to choose the most suitable insurance product?	The principal criterion for selection is price; the second criterion is the ratio of price and insurance coverage
Insurance products	What are positive and negative characteristics of the insurance product?	Positive - insurance protection, negative - high price
Risks, insurance risk	How to calculate insurable risk	By statistical data analysis, to estimate risk probability
Risks, insurance risk	What are the attributes of insurance risk?	Non-speculative character, inadvertency, probability, and randomness
Choice of an insurance company	What are the criteria for choosing an insurance company?	Rating, brand, scale and longevity, size of charter capital, reviews in social media, solvency
Choice of an insurance company	What sources of information about the insurance company are the most accessible?	Three main sources: the company's website, the website of the Russian Central Bank, financial statements of the insurance company; then - social media, Internet resources, websites of rating agencies, advertising materials
Insurance brokers	What is insurance brokerage?	To offer and sale insurance products; insurance consulting

Source: Financial University 2017

3rd year (of total 54 students from two groups) took part in the survey, of the average age of 20-22 years, with male predominance of 74% to 26%. It should be noted that students of the 3rd year of bachelor's degree in Economics had acquired propaedeutic knowledge of the subject "Insurance" studying during the 1st year the subject "Introduction to the specialty". For the study of financial literacy, four categories of processes - four types of cognitive activity were established: detection of financial information; analysis of information in the financial context; assessment of financial problems; application of financial knowledge. The measurement of financial literacy is very elastic to formulation of the survey questions, which provides additional evidence of limited financial knowledge.

The questionnaire includes questions

- on insurance products, concerning the detection of insurance information and application of insurance knowledge;
- on insurance risk in terms of detection of insurance information and analysis of such information;
- on the choice of the insurance company concerning the identification of financial knowledge, assessment of insurance problems and application of insurance knowledge;
- on insurance intermediaries in terms of financial knowledge application.

Insurance literacy provides tools for making informed decisions to choose the right types of insurance coverage, timely terminate unnecessary insurance coverage, and maximize the usefulness of existing and expecting insurance coverage in relation to the insurance premiums. However, insurance is not a subject taught in school or provided with a lot of reliable consumer-oriented information.

RESULTS AND DISCUSSION

Table 1 presents the results of the financial literacy assessment by applying methodology developed by

NFNC (National Financial Educators Council), which divides all topics into 10 thematic areas. The Risk Management and Insurance section describes how to identify and manage potential risks, how to select an insurance provider or product, and insurance protection policy.

At first glance, the answers of the 3rd year undergraduate students are financially literate and professional. However, if to consider the percentage of correct and incorrect answers, it becomes clear that the level of financial and insurance knowledge is significantly differentiated by groups of students.

Analyzing the answers about the insurance product shows that 10 students, or 25.6%, of the respondents did not answer both questions; 7 students, or 17.9%, of the respondents did not answer the second and main question in the first section: "how to choose the most suitable insurance product". 15.4% of respondents believe that the choice of insurance product is determined by the need for insurance protection or the need to comply with requirements for getting another service (for example, when obtaining a travel permit). Thus, they belong to those choosing a first product and neglecting advantages of comparison or analysis. 6% of students believe that price is the principal criterion for selection, which still involves making a comparison with the proposals of other insurance companies. A quarter of students justified their answers by various arguments, mostly professional: for instance, the quality of the insurance product they determine by the price-insurance coverage ratio, insurance conditions and exclusions from insurance coverage, a set of risks and the range of insurance services. As declarative, this approach is the most effective, but the students who answered correctly do not have the tool to implement such approach. It indicates the need to change the work program of the discipline, meaning to spend more hours for practical training in order to improve skills. Concerning the question about insurance products needed in everyday life, 10 students, or 25.6%, did not answer. 29 students, or 74.4%, believe that life insurance, health insurance,

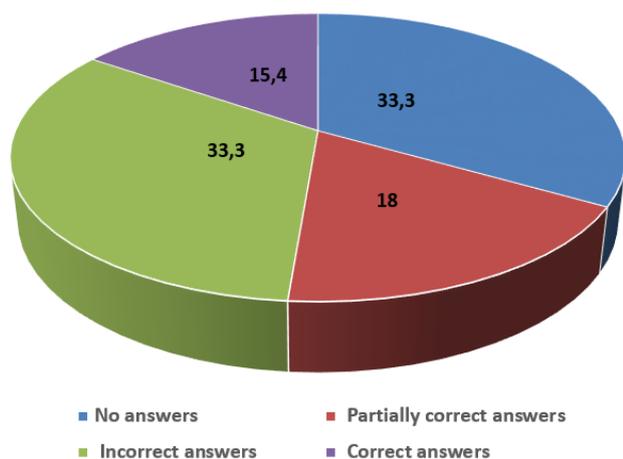


Fig. 1. Ratio of students answers about risks, %
Source: Financial University 2017

motor vehicle insurance are necessary and only 8 out of 29 students consider housing insurance necessary. None of the respondents pointed out pension insurance or other long-term accumulative insurance, which indicates lack of interest in the accumulation or worry about the level of their future pensions.

For developing and improving financial literacy, one of important skills is the risk awareness, which affects the choice of adequate insurance coverage as well as comprehension of the consequences after choosing pension insurance products. 13 students did not answer questions about the risk assessment and the possibility of risk insurance, 7 students gave incorrect answers or too general phrases, referring to the need to use mathematical calculating (**Fig. 1**).

Only 6 students believe that risk can be assessed by the calculation of its probability, and the frequency of risk events, with necessarily applying the law of large numbers, which makes possible the most accurate reflecting of the risk probability. The right attitude to risk should be developed from an early age, with school education as a base to form the knowledge about risk management system. The elements of risk in the environment and human society should be reflected in the school programs on an interdisciplinary basis. Subject "Basics of life safety", taught in institutions of elementary, general and vocational education, gives only general notion of the safe behavior in everyday life, but without emphasis on risk and risk-forecast in the human action/inaction correlation. Moreover, risk is a universal term, since it affects almost all the sciences, religions, arts, culture, knowledge and skills. Hence, the permanent study of risk manifestations, risk assessment, the ability to manage risk is the main task of any level education.

The second set of questions about risk is focused on in-depth understanding of risk, namely the selection of risk having characteristics of insurance. To answer this question correctly, students had to learn the principles of

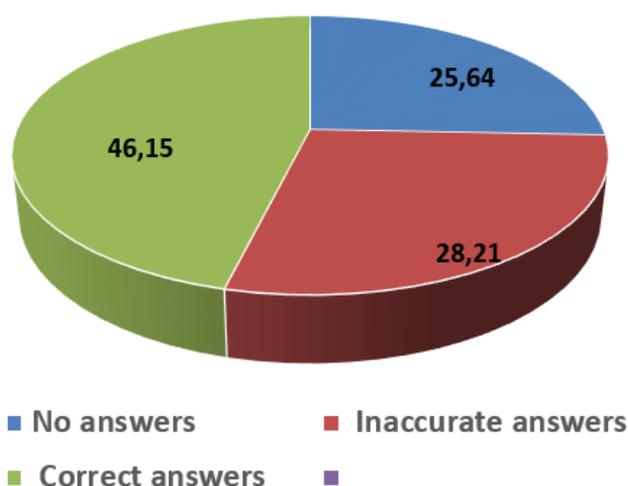


Fig. 2. Ratio of students answers on choosing an insurance provider, %
Source: Financial University 2017

risk classification and how to comply with the risk requirements established by the insurance methodology. According to the survey results, 12 students (30.8%) did not answer this question. Of the 27 students (69.2 per cent) answered the question, 11 students answered incorrectly, while 16 students pointed out both essential and non-essential features of the risk subject to insurance. And only 3 students (7.7%) identified essential features of insurance risk, namely the probability and randomness. It should be noted that most of the students of the 3rd year have some experience in insurance, such as compulsory insurance for vehicle owners (who have a car or driving with power of attorney for a motor vehicle) or tourist insurance (those who have used the travel insurance policy). However, lacking basic knowledge about the insurance risk or the possibility of risk insurance under certain conditions because of the need to balance the set of risks and financial resources to cover them, students are unable to adequately assess the insurance services. This kind of insurance assessment points to far-reaching conclusions: the activities deceptively seem unfair are not attractive to the young generation who keep illusions alive that ideal human relationships are possible (which, of course, is facilitated by virtual community).

When checking the knowledge and skills, necessary to select an insurance provider, and using information sources ranked as available and reliable, 10 out of 39 surveyed students of the 3rd year did not answer the question (**Fig. 2**).

11 students invoked rather inaccurate principles of their choice and 18 students coped with the task. Most of them (80%) named the rating as an indicator of reliability, adding the measure of solvency, financial sustainability, stability. Only 4 students pointed out that in order to assess they would make a comparison between the collected insurance premium and insurance

payments, which indicates non-declarative approach to the choosing an insurance company. 13 students indicated their intention to use social media for choosing an insurance company, namely, reviews about its reputation and quality of its services.

In order to check and evaluate the sources of information, students were asked about the most accessible sources to obtain information about the insurance company. The ability to identify reliable and verified information is an important skill and an important element of the qualification of a young specialist / bachelor. Additionally, the ability to identify reliable and verified information inspires the students respect for knowledge, increasing its value and importance, which affects the attitude towards education. According to the survey, only 5 students did not answer the question, and 66.7% of the respondents answered not only correctly, but in a detailed manner. 23.5% of students answered inaccurately, but their answers should not be assessed as incorrect. The main sources available to assess the insurance company, according to the students: the website of the Russian Central Bank, the section of financial statements and statistical reporting on the website of an insurance company, websites of rating agencies.

Solution to the problem of financial literacy depends on many factors and requires not only duration, but also consistency. Spiraling complexity of economic and financial processes, globalization, changing values may lead programs of improving financial literacy to negative results, if not to impose permanent control in the format of feedback and not to bring a diversity in educational processes as a correction measure. Up to present, there is no universal definition of financial literacy, which can be understood as the ability of subjects to understand financial products for informed decision-making, or financial capacity, financial competence/responsibility, or complex financial knowledge and skills, etc. (Alifanova and Evlahova 2012). The lack of a universal definition stamps its mark on financial literacy programs, set up not as a dynamic process but as a final measure to eliminate financial illiteracy. But unlike the alphabet, the science of finance is constantly developing and implemented into practice, which requires a reassessment of the financial literacy concept. Financial literacy should be functional, because its principal task is not in reproducing knowledge and skills, but in their practical application (Kovaleva 2017). Interview reports on 5 components of financial literacy from the survey conducted by the largest financial regulator of the United States – FINRA, showed that the level of financial knowledge decreased in the period from 2009 to 2015. 46% of respondents gave correct answers to the questions about the risk in 2015 against 53% in 2009, when 41% of respondents gave wrong answers to the question about inflation in 2015 against 35% in 2009.

Lack of practical skills levels the knowledge and leads to high self-assessment.

For Russia, the issue of improving financial literacy is becoming more urgent with the pension system under reform, while individually invested pension savings are to be increasingly important. The results of surveys of students (finance specialization) demonstrate that none of the respondents with sufficient financial knowledge did mention long-term financial products, such as pension insurance, investment insurance, etc. Thus, programs of improving financial literacy should include not only educational process, but also forming of the consulting body of independent mediators and financiers to motivate Russian citizens to participate in economic life (Kamneva et al. 2018, Kirillova 2013, 2017, 2018, Kuznetsova 2001, OECD 2016, Rita et al. 2000, Rooij et al. 2007, Sidorov 2010, Tsyganov 2017, Tsyganov and Bryzgalov 2014, 2016, Tsyganov et al. 2014).

CONCLUSION AND RECOMMENDATIONS

The conducted research on financial literacy among students of finance specialization has identified their level of financial literacy, as well as gaps in the educational program designed for today's Russian students - future bachelors and employees of insurance companies. Comparative analysis shows that the financial literacy rate of Russian students is as good as that of their peers in other countries. According to the results of the OECD program on the international assessment of financial literacy among students, as of 2015, 22% of students do not even have basic financial skills (Rita). Assuming the unanswered questions as the evidence of lacking financial knowledge, the presented survey identifies such respondents at an average rate of 25%. In a survey conducted in 10 Western European countries in 2016, Germany earned the highest score on risk literacy, but only 19% of respondents there gave the correct answers. The surveyed students of the Financial University, on average, correctly answered questions about insurance literacy at the rate of 30%. It should be adjusted for the fact that the study of financial disciplines is included in the bachelors educational program. At the same time, the questionnaire did not contain practical tasks and tests, extremely important as indicators to assess the ability of surveyed participants to apply theoretical knowledge into practice, i.e. to have functional financial literacy. Additionally, only 15% of the students who took part in the survey have some knowledge about all matters of insurance literacy, which indicates the need to make changes not only in the educational program, but also in the program of practical training, as well as to stimulate social activity of students as consultants on insurance issues for students of other faculties and specializations.

Comparative analysis of the resulted data on the level of financial/insurance literacy among students of

finance specialization provides the basis to make recommendations for financial educational institutions. In addition, the guidelines of insurance literacy of students are of practical value to the executives of insurance companies to design inquiry forms and questionnaires for hiring graduates with insurance specialization.

In order to develop further the acquired knowledge, skills and functional financial literacy, we recommend to spend more hours of practical training during the graduate course, as well as to introduce for students a two-week practical training at the end of the 3rd course as consultants on 1-2 insurance products, for example, in the office of insurance broker or insurance agencies. In order to consolidate the acquired financial / insurance knowledge and skills, we recommend to apply a new model of practical training during the academic year for students of the 3rd year of finance specialization in the

form of consultations on insurance issues for fellow students of other faculties and fields of training.

Taking into account the insufficient knowledge and ability to assess the risk, we recommend to spend more hours on the working program Life Safety in its Risk Management section.

In order to correct the amount and forms of knowledge and skills acquired by students mastering in disciplines of insurance, as well as to identify gaps in knowledge, we recommend to use the input and output survey/testing of insurance literacy to improve the methods of teaching academic majors. In accord with international professional standards, we recommend to make continuous improvement of insurance literacy obligatory, which can be stimulated by a step-by-step testing system and issuance of a certificate to confirm the appropriate level of insurance / financial literacy.

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