The paper aims to present the results of the experiment focused at examining the cognitive component maturity of directors’ risk management skills. In order to assess directors cognitive risk management skills according to “knowledge awareness/non-awareness” a testing form “Core of Risk Management at Educational Institutions”, a mini-case “Risk Management Procedure and Tools” were applied. The cognitive component of risk management skills provides the system of knowledge which should be mastered by directors and should act like a base for the formation of necessary skills for risk management at educational institutions. It can be determined by the following indices: knowledge of conceptual regulations of risk management at educational institutions, processes of management of risks at educational institutions, mastering methods of risks processing, ways of preventing and overcoming risks at educational institutions, logical and adapting thinking skills. The results of qualitative and quantitative indices of the assessment of performed testing tasks show insufficient knowledge of directors of theory and methods of risk management at educational institutions, which conditions the need for paying special attention to this fact as it is knowledge which is the core of directors’ risk management skills in terms of educational institutions.

Keywords: knowledge, cognitive component, director, risk, risk management.

Introduction

The studying of any science should be based on the groundwork, initial observations and statements, investigating those fact which are the foundation of its pyramid structure. One cannot build a pyramid starting from the top, the construction is possible just from its foundation. That is why the maturity of cognitive component of directors’ risks management skills is the basis of professional activities in this field.

The analysis of scientific both domestic and foreign literature shows the necessity of implementing the issues covering the formation of future experts’ methodological, system knowledge in the educational process (according to [1], [2], [3], [4], [6], [8], [9]).

Cognitive component involves a system of knowledge that should be mastered by future directors and act like a basis of the formation of necessary skills for risk management. Cognition is a key concept in this phenomenon which means a set of mental processes – perception, categorization, thinking, speaking, etc., which help to process information.

The foundations of cognitions and their development was examined in the works of L. Vygotsky, who dealt with not only the development of human intelligence and
psyche in the social context but also historical development of knowledge at the social level. He has distinguished two levels of cognitive development: the level of current development determined by human ability to solve tasks and potential which is defined by the nature of challenges which will be addressed under adults’ control [2].

Thus, cognition is a central concept determining mental processes – perception, imagination, memory feeling, in other words, it covers all processes that transform sensory information into mental representations of different types (categories, images, concepts) in order to activate them according to the type of activity when necessary.

G. Shchedrovytskyi states that knowledge is manifested in different mental and activity forms which is reflected in processes and structure of complex team activity [9, p. 51].

E. Karpova notes that knowledge is the goal of purposeful coordinated activity. Every field has its set of interrelated elements which make a complex of knowledge. These elements can involve vocabulary, rules, theorems, formulae, concepts, etc. [6, p. 80].

\[ C = \frac{I_{21} + I_{22} + I_{23} + I_{24} + I_{25}}{5} = \frac{5S_{21} + 7,69S_{22} + 20S_{23} + 20S_{24} + 6,67S_{25}}{5} \]

where: \( C \) – the calculated number of scores according to the “awareness-non-awareness of knowledge” criterion; \( S_{21} \) – number of scores received by the surveyed according to indices 2.1 – 2.5; \( I_{21} \) – standardized number of scores received by the surveyed according to indices 2.1 – 2.5.

In order to calculate numerical intervals of the levels of directors’ risk management skills (low, satisfactory and sufficient) we used standard error method.

The experiment involved 208 participants: 104 directors with working experience (experimental group) and 10 students-future directors without working experience (control group).

**Research Results**

We distinguish the following indices of “knowledge awareness-non-awareness” criterion of the cognitive component of directors’ risk management skills in terms of educational institutions: knowledge of conceptual provisions of risk management at educational institutions, the processes of managing risks at educational institutions, methods of risks processing, ways of preventing and overcoming risks at educational institutions (fundraising activity, civil organizations, social partnership, volunteering, etc.); adaptive and logical thinking skills. The obtained results of assessing the levels of cognitive skills of risk management of the respondents (students and the ones having working experience) are presented in Tables 2, 3.

**Coefﬁcients of shifting to 0-100-point scale and calculation formulae**

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Characteristics</th>
<th>Scores according to the technique</th>
<th>Coefficient of shifting the left border</th>
<th>Coefficient of expansion/narrowing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge awareness-non-awareness (C2)</td>
<td>2.1. Knowledge of conceptual points of risk management in terms of educational institutions (( I_{21} ))</td>
<td>від 0 до 20</td>
<td>-</td>
<td>[ \frac{100}{20 - 0} = 5 ]</td>
</tr>
<tr>
<td></td>
<td>Calculation formula</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>( I_{21} = 5S_{21} )</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Knowledge awareness-non-awareness (C2)</td>
<td>2.2. Knowledge of the processes of risk management in terms of educational institutions (( I_{22} ))</td>
<td>from 0 to 13</td>
<td>-</td>
<td>[ \frac{100}{13 - 0} = 7,69 ]</td>
</tr>
<tr>
<td></td>
<td>Calculation formula</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>( I_{22} = 7,69S_{22} )</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The paper aims to present the results of the experiment focused at examining the maturity of cognitive component maturity of directors’ risk management skills.

**Research Methods**

In order to assess directors cognitive risk management skills according to “knowledge awareness/non-awareness” we designed a testing form “Core of Risk Management at Educational Institutions”, a mini-case “Risk Management Procedure and Tools” using A. Dolgorukov technique [10].

In order to generalize the inventories used, we made their scales equal by making the gradation from 0 to 100 scores by means of the method presented in the scientific work by O. Yeliseiev [5]. The coefficients are presented in Table 1.

The assessment according to “awareness-non-awareness of knowledge” criterion was performed using a formula:

\[ C = \frac{I_{21} + I_{22} + I_{23} + I_{24} + I_{25}}{5} = \frac{5S_{21} + 7,69S_{22} + 20S_{23} + 20S_{24} + 6,67S_{25}}{5} \]

where: \( C \) – the calculated number of scores according to the “awareness-non-awareness of knowledge” criterion; \( S_{21} \) – number of scores received by the surveyed according to indices 2.1 – 2.5; \( I_{21} \) – standardized number of scores received by the surveyed according to indices 2.1 – 2.5.
### Results of assessing cognitive component maturity of directors having work experience

<table>
<thead>
<tr>
<th>Indices of “knowledge awareness/non-awareness” criterion</th>
<th>Levels</th>
<th>Sufficient</th>
<th>%</th>
<th>Number of persons</th>
<th>Satisfactory</th>
<th>%</th>
<th>Number of persons</th>
<th>Low</th>
<th>%</th>
<th>Number of persons</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge of conceptual points of risk management in terms of educational institutions (I_{21})</td>
<td>EG</td>
<td>8.65</td>
<td>9</td>
<td>50.96</td>
<td>53</td>
<td>40.39</td>
<td>42</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Knowledge of the processes of risk management in terms of educational institutions (I_{22})</td>
<td></td>
<td>23.08</td>
<td>24</td>
<td>44.23</td>
<td>46</td>
<td>32.69</td>
<td>34</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mastering methods of risks processing at educational institutions according to risks management processes (I_{23})</td>
<td></td>
<td>9.62</td>
<td>10</td>
<td>52.88</td>
<td>55</td>
<td>37.5</td>
<td>39</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mastering ways of preventing and overcoming risks at educational institutions (I_{24})</td>
<td></td>
<td>13.46</td>
<td>14</td>
<td>48.08</td>
<td>50</td>
<td>38.46</td>
<td>40</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ability for logical and adaptive thinking (I_{25})</td>
<td></td>
<td>13.46</td>
<td>14</td>
<td>50.96</td>
<td>53</td>
<td>35.58</td>
<td>37</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cognitive skills</td>
<td></td>
<td>10.58</td>
<td>11</td>
<td>51.92</td>
<td>54</td>
<td>37.5</td>
<td>39</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Results of assessing cognitive component maturity of future directors without work experience

<table>
<thead>
<tr>
<th>Indices of “knowledge awareness/non-awareness” criterion</th>
<th>Levels</th>
<th>Sufficient</th>
<th>%</th>
<th>Number of persons</th>
<th>Satisfactory</th>
<th>%</th>
<th>Number of persons</th>
<th>Low</th>
<th>%</th>
<th>Number of persons</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge of conceptual points of risk management in terms of educational institutions (I_{21})</td>
<td>CG</td>
<td>9.62</td>
<td>10</td>
<td>52.88</td>
<td>55</td>
<td>37.5</td>
<td>39</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Knowledge of the processes of risk management</td>
<td></td>
<td>19.23</td>
<td>20</td>
<td>52</td>
<td>52</td>
<td>30.76</td>
<td>32</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

As we can see in Tables 2, 3, according to the index of “knowledge awareness-non-awareness” criterion, there are 8.65% of the respondents with the sufficient level of cognitive component of risk management skills in the EG, 9.62% - in the CG. The satisfactory level was found in 50.96% of the respondents in the EG and 52.88% - CG, low – 40.39% and 37.5% accordingly.

Table 2.

Table 3.
The research outcomes show that the majority of future directors are aware of conceptual regulations of risk management in terms of education, can interpret the essence of the concepts “risk”, “uncertainty”, “risk situation”, “risk management”. Only 37.5% of the EG respondents and 32.69% of the CG respondents have knowledge of conditions of risks; 39.42% of the EG respondents and 30.76% of the CG respondents know the functions of risk management. At the same most of the surveyed note that the nature of risk is objective; they cannot see the difference between risk and danger; they consider risk as an opportunity of departure from the goal for the sake of which the chosen alternative is being realized; do not identify risk management and management of risks; they believe that the functions of risk management is prediction, motivation, control. The greatest number of mistakes was made concerning the classification of risks in education: according to categories of directors there were distinguished political and legal, financial, organizational, staff, managerial, informational and communicational, sociocultural, etc.; according to the source of their appearance: microrisks, mesorisks, microrisks, etc.

According to the results of assessing the levels of future directors’ levels of maturity of risk management skills by the index “Knowledge of the processes of risk management in terms of educational institutions” 23.08% of the EG participants and 19.23% of the CG participants have sufficient level, satisfactory – 44.23% of EG respondents and 50% of the CG respondents; low – 32.69% and 30.76% accordingly.

Concerning the second index, we have found that most of the experiment participants are not aware of the processes of managing the risks, which has been confirmed by the fact that the logical sequence of the suggested processes was correctly defined only by 8.65% of the respondents.

The sufficient level according to the index “Mastering methods of risks processing at educational institutions according to risks management processes” was found in 9.62% of the EG participants and 19.23% of the CG respondents. The satisfactory level was found in 52.88% of the EG respondents and 48.08% of the CG respondents. The low level was found in 37.50% and 32.69% accordingly. Most of the students are familiar with such methods as questioning, interviewing, expert evaluation, etc., but do not have skills of their application.

According to the index “Mastering ways of preventing and overcoming risks at educational institutions” we have found 13.46% of the EG students and 11.54% of the CG students who have sufficient level. The satisfactory level was found in 48.08% of the EG participants and 50.00% of the CG participants; low – 38.46% and 38.46% accordingly. The most of the respondents have slight knowledge about the ways of preventing and overcoming risks because they cannot differentiate fundraising, sponsorship, voluntary organizations and their characteristics. However, almost everyone defined social partnership as a way of preventing and overcoming risks at educational institutions, determining it through the system of interrelations between the representatives of the employees, employers and local authorities.

The analysis of testing tasks of the open format has shown that the answers of 52.88% of the participants were short and deficient, without revealing the essence of risks. However, they could reveal the aim of monitoring and control in the process of risk management at educational institutions.

According to the last index – the ability for logical and adaptive thinking – the sufficient level was found in 13.46% of the EG directors and 11.54% of the CG participants; satisfactory – 50.96% and 49.04%; low – 35.58% and 39.42% respectively.

The data according to this index were assessed in the process on working on a mini-case. The research outcomes analysis has shown that the participants could not always adapt the received information according to the task, could not formulate and analyze most of risks the case involved, etc.

Concerning the general level of maturity of the respondents’ risk management skills according to the criterion “knowledge awareness/non-awareness” of the cognitive component, we have found that 10.58% and 11.54% of the EG and CG respondent has sufficient level, 51.92% and 50.96% has satisfactory level; 37.50% and 37.50% - low level respectively.
Conclusion

The cognitive component of risk management skills provides the system of knowledge which should be mastered by directors and should act like a base for the formation of necessary skills for risk management at educational institutions. It can be determined by the following indices: knowledge of conceptual regulations of risk management at educational institutions, processes of management of risks at educational institutions, mastering methods of risks processing, ways of preventing and overcoming risks at educational institutions, logical and adapting thinking skills.

The results of qualitative and quantitative indices of the assessment of performed testing tasks show insufficient knowledge of directors of theory and methods of risk management at educational institutions, which conditions the need for paying special attention to this fact as it is knowledge which is the core of directors’ risk management skills in terms of educational institutions.

REFERENCES


ЛІТЕРАТУРА

Сформованість когнітивного компоненту готовності керівників до управління ризиками

Сформованість когнітивного компоненту готовності керівників до управління ризиками є підґрунтям у його професійній діяльності для виконання завдань різної управленської складності. Вивчення будь-якої науки повинно починатися з фундаменту, з первинних спостережень та утворення первинних суджень, із вивчення тих фактів, на яких заснована пірамідальна система науки. Неможливо починати будувати піраміду з верхівки, потрібно починати з фундаменту. Мета статті: презентувати результати сформованості когнітивного компоненту готовності керівників до управління ризиками. Методи дослідження: теоретичні: аналіз, порівняння й узагальнення філософської, психологічної, педагогічної, управленської, економічної науково-методичної літератури з проблем когнітивної готовності керівників до управління ризиками; емпіричні: тестування, анкетування, опитування; методи математичної статистики. У статті уточнено поняття «знання», розкрито показники когнітивної готовності керівників до управління ризиками та діагностувані методики, презентовано результати оцінювання когнітивної готовності керівників до управління ризиками. Доведено, що когніція є центральним поняттям, яке починання пізнавальний процес або сукупність психічних (ментальних) процесів – сприйняття, уява, мислення, пам’ять, мовлення, почування. Когнітивний компонент містить систему знань, які мають бути усвідомлені керівниками і виступати підґрунтям для формування необхідних умінь/навичок для управління ризиками у навчальних закладах. Без знань базових положень методології ризиків неможливо подальше управління ними. Визначено показники когнітивної готовності керівників до управління ризиками: обізнаність із концептуальними положеннями методології у навчальних закладах, обізнаність із процесами управління ризиками у навчальних закладах, оцінки методами обробки ризиків у навчальних закладах відповідно до процесів управління ризиками, оцінки шляхами запобігання та подолання ризиків у навчальному закладі; здатність до розумового логічного структурування й адаптивного мислення. За результатами кількісних і якісних показників оцінки виконаних тестових завдань обґрунтовано недостатню обізнаність керівників з теорією і методикою управлення ризиками у навчальних закладах, що переконливо засвідчує необхідність целеспрямованої підготовки, оскільки саме знання є стрічкін готовності керівників до управління ризиками у навчальних закладах.

Ключові слова: знання, когнітивна готовність, керівник, ризик, управління ризиками.

Submitted on June, 21, 2017