Synesis, v. 15, n.2, 2023, ISSN 1984-6754

EVALUATION OF TRANSPORTATION KNOWLEDGE OF LOGISTICS PROGRAMME STUDENTS STUDYING IN VOCATIONAL SCHOOLS

AVALIAÇÃO DO CONHECIMENTO SOBRE TRANSPORTE DE ESTUDANTES DO PROGRAMA DE LOGÍSTICA QUE ESTUDAM EM ESCOLAS PROFISSIONALIZANTES

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Received: 25 Jan 2023
Accepted: 01 Mar 2023
Published: 18 Mar 2023

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Abstract: This study was aimed to evaluate the level of knowledge of students studying at the associate degree level in the logistics programs of vocational schools about the types of transportation. Within the scope of the study, a questionnaire was applied to first and second grade logistics program students studying at a vocational school affiliated to a public university in the Western Mediterranean Region of Turkey and the obtained data were analysed. As a result of the study, it was determined that the students participating in the study generally have sufficient knowledge about basic transportation types, but their knowledge about multimodal transportation is insufficient. In addition, it was concluded that the courses on transportation types and methods in vocational schools are insufficient and suggestions were made to improve this situation.

Keywords: Logistics. Logistics Education. Transportation. Vocational School.

Resumo: Este estudo teve como objetivo avaliar o nível de conhecimento dos alunos que estudam no nível de grau de associado nos programas de logística das escolas vocacionais sobre os tipos de transporte. Dentro do escopo do estudo, um questionário foi aplicado aos estudantes dos programas de logística de primeira e segunda séries de uma escola profissionalizante afiliada a uma universidade pública na região oeste do Mediterrâneo da Turquia e os dados obtidos foram analisados. Como resultado do estudo, foi determinado que os estudantes participantes do estudo geralmente têm conhecimentos suficientes sobre os tipos básicos de transporte, mas seus conhecimentos sobre transporte multimodal são insuficientes. Além disso, concluiu-se que os cursos sobre tipos e métodos de transporte nas escolas profissionalizantes são insuficientes e foram feitas sugestões para melhorar esta situação.

Palavras-chave: Logística. Educação Logística. Transporte. Escola vocacional.

1. Introduction

Regardless of the level of development of countries, there is a need for qualified employees in the logistics sector as in other sectors. Considering national and international competition conditions, qualified labour force is an important element for businesses and economies. In this respect, the need to train qualified labour force has caused the concept of education to come to the fore. The personnel who start working in the sector with the knowledge and experience them have gained after the training activities mean qualified labour force and this situation makes a significant contribution to both the logistics sector and the country's economies (Özkan & Bozyiğit, 2020: 567).

In recent years, in parallel with the increasing importance of logistics activities in terms of economic and social aspects, the concept of logistics has started to be addressed academically in Turkey and the world. For this reason, many universities in Turkey have started to provide logistics education at graduate, undergraduate and associate degree levels (Altuğ, 2013: 210). The main purpose of these trainings provided in higher education institutions is to train qualified personnel for the logistics sector. In this scope, undergraduate and postgraduate trainings are carried out in order to train researchers in the field of logistics and education as well as providing qualified managerial personnel to the sector. The fact that the logistics sector is a labour-intensive service sector and its importance is increasing day by day has led to the emergence of a significant need for qualified intermediate staff in the sector. The qualified intermediate staffs needed by the logistics sector are trained in vocational schools at the associate degree level.

This study was conducted to evaluate the level of knowledge of students studying at the associate degree level in the logistics programs of vocational schools about the types of transportation.

Within the scope of the study, a questionnaire was applied to the students of the vocational school logistics program. The population of the study consisted of first and second grade logistics program students studying at a vocational school affiliated to a public university located in the Western Mediterranean Region of Turkey in the 2022-2023 academic years. The questionnaire form created within the scope of the study was divided into three sections. In the first part of the questionnaire form, in addition to demographic information, there are 5 questions in total to determine whether the participants have

knowledge about the types of transportation. In the second part of the questionnaire, there are 9 questions to evaluate the knowledge of logistics program students about basic transportation types and in the last part; there are 10 questions about multimodal transportation types. The questionnaire form was prepared online and the forms were delivered to the students and they were asked to answer these questions. Of the 83 questionnaire forms collected within the scope of the study, 80 were deemed valid and the study was conducted with the data obtained from the valid questionnaire forms. Frequency analyses of the data obtained within the scope of the study were made with IBM SPSS 16.0 program and comparison analyses were made with Microsoft Excel PivotTable program.

Following the introduction, the first section of the study includes the conceptual framework of the study, the second section includes a summary of the literature, the third section includes the methodology of the study, the fourth section includes the application of the study and the fifth section includes the conclusion.

2. Conceptual Framework

In this section, brief information about logistics education, logistics education in Turkey and the types of transportation covered in this study is presented.

2.1. Logistics Education

In recent years, logistics activities have rapidly developed and become widespread in Turkey and the world. The concept of logistics is explained differently by many industry pioneers and researchers. However, in all of these definitions, the concept has similar characteristics and is based on planning and integration. Considering the developments in the field of logistics, logistics education is of great importance for businesses, countries and the world economy (Karasoy, 2022: 41).

As logistics activities became integrated in the last quarter of the 20th century and their value increased in terms of national economies, educational institutions have addressed logistics education from different angles, including applied and theoretical education, in order to train the qualified workforce required for the logistics sector (Emanet & Kaynak, 2014: 162). In this process, logistics has gone beyond being defined

only as transportation activities and has started to be accepted as an interdisciplinary activity that includes various activities (Porasmaa & Kotonen, 2013: 1).

Logistics education is based on two different approaches: the engineering model and the business model. The engineering model is based on design and aims to meet all the specific and general requirements of customers, to ensure efficient workflow and to provide quality and cost-effective solutions at the desired service level. This model has a structure that designs the logistics activity process with the help of technical and mathematical operations. In the business model, it is based on the principle that products can be supplied from anywhere in the world with the help of information and communication technologies in changing and developing market conditions (Çıkmak, 2016: 3; Küçüksolak, 2006: 41)

Today, logistics education in Turkey and the world is provided at graduate, undergraduate and associate degree levels in higher education institutions. Graduate level education is provided to train researchers for the education sector or to improve the quality of the workforce working in the sector, while undergraduate education is provided to train managers, planners or practitioners for the sector (Çalışkan & Öztürkoğlu, 2014: 148). Logistics education at the associate degree level is provided to meet the need for qualified intermediate staff in the logistics sector due to the development of industry in developed or developing countries. In Turkey, logistics education is provided at the undergraduate and graduate level within institutes, faculties and colleges, and at the associate degree level through vocational schools.

2.2. Logistics Education at Associate Degree Level in Turkey

The main purpose of logistics programs offered by vocational schools at the associate degree level is to teach students basic logistics terms, problems and solutions to these problems, as well as to train qualified employees who can look at logistics concepts such as transportation, handling, storage, stocking from a scientific perspective and have the ability to solve the problems they encounter in the sector (Çetinkaya, 2014: 175). In line with this purpose, the number of associate degree programs providing logistics education in Turkey is increasing every year in order to meet the need for qualified personnel in the sector.

In 2011, a total of 60 vocational schools in Turkey were offering logistics education and the total quota of these programs was 4,800 (Çıkmak, 2016: 4). However, in parallel with the increasing need for qualified personnel in the sector, the importance of logistics education has also increased and in 2022, it was determined that a total of 93 universities, 77 of which are public and 16 foundation universities, provide logistics education at associate degree level and the total quota allocated for these programs is 6,964 (ÖSYM, 2022). In these programs, students are taught transportation, warehousing, inventory, customer relations, production and order management courses as well as courses that form the basis of logistics such as information technologies, foreign trade, law and outsourcing (Altuğ, 2013: 210).

2.3. Types of Transportation

Within the scope of the study, since logistics program students were asked various questions about the basic characteristics of transportation types, advantages and disadvantages of transportation types against other transportation types, as well as multimodal transportation types, transportation and multimodal transportation types are briefly explained in this section.

2.3.1. Basic Transportation Types

The characteristics of the basic types of transportation, namely maritime, road, air and rail transport are briefly described below.

2.3.1.1. Maritime Transportation

It is widely used in the transportation of heavy and large volumes of cargo where delivery time is not important. Maritime transportation is a safe type of transportation because it allows the transportation of large amounts of cargo at one time and is less affected by natural conditions compared to other types of transportation. The transportation cost per unit load in maritime transportation is 3.5 times lower than railway transportation, 7 times lower than road transportation and 14 times lower than air transportation. For this reason, 80% of the cargo in international trade is carried by maritime transportation (Ulaştırma ve Turizm Paneli, 2003: 8).

2.3.1.2. Road Transportation

The most important feature is that it enables the delivery of the product subject to transportation from door to door without transfer. Although it is an economical type of transportation in short and medium distances, it has a flexible structure in terms of the amount of goods to be transported and movement compared to other types of transportation (Yavuz, 2006: 80). Road transportation is the most widely used type of transportation in national transportation due to its flexible structure and door-to-door delivery.

2.3.1.3. Air Transportation

It is frequently used in the transportation of valuable, small volume and light loads over long distances where transportation time is important. Although the transportation speed is very high, the transportation cost per unit load is quite high compared to other transportation types (Takım & Ersungur, 2015: 366). In addition, due to its transportation speed, air transportation has a structure that reduces the storage costs of products.

2.3.1.4. Railway Transportation

Since it enables the transportation of heavy and large volume loads, the transportation cost per unit load is low. For this reason, railway transportation is the most effective type of transportation along with maritime transportation in long-distance freight transportation. Due to its low fuel consumption per unit load, it is not only an environmentally sensitive type of transportation, but it is also less affected by environmental factors and is therefore considered a safe type of transportation (Karacan & Kaya, 2011: 21).

2.3.2. Multimodal Transportation

Multimodal transportation, also called multimodal transportation, is defined as the use of more than one type of transportation in the process of transporting cargo (Bozkurt, 2019: 4).

2.3.2.1 Intermodal Transportation

In intermodal transportation, also called intermodal transportation, more than one type of transportation is used in the process of transporting the cargo. It is a type of transportation that is carried out by taking the transported cargo from the transportation vehicle and transferring it to another transportation vehicle (Görçün & Görçün, 2018: 69).

2.3.2.2. Combined Transportation

It is the transportation of the transported cargo by placing it on another means of transportation together with the carrier. In this type of transportation, the transportation activity starts with road transportation and the long-distance transportation is carried out by sea or railway and ends with road transportation again at the delivery point (Görçün & Görçün, 2018: 70-71).

RO-RO Transportation: It is the transportation of a road transport vehicle with its cargo on a maritime transport vehicle (Akay, 2016: 53).

RO-LA Transportation: It is the transportation of a road transport vehicle with its cargo on a railway transport vehicle (Akay, 2016: 48).

3. Literature Review

As a result of the detailed literature research conducted within the scope of the study, some of the studies on the subject are presented below.

Ozment and Keller (2011) conducted their study to address the current situation of students studying in logistics and supply chain programs in American universities, to investigate the reasons for the lack of skills and to offer solutions to overcome these deficiencies. As a result of the study, they concluded that the number of logistics and supply chain students in America is not at a level that can meet the personnel needs of American businesses.

Gravier and Farris (2008) conducted their study to provide information about the history, current status and future directions of logistics education for educators and practitioners in order to improve logistics education. In this context, they conducted a

detailed literature review and as a result of the research, they identified four main macro-environmental factors affecting the current state of logistics education: the lack of faculty members with logistics education, the increase in logistics education programs, changes in content needs and educational environments.

Lancioni, Forman and Smith (2001) conducted their study to reveal the barriers to logistics education in higher education institutions. Within the scope of the study, they formed focus groups consisting of faculty managers and deans from universities providing logistics education. As a result of the study, they determined that the establishment and implementation of logistics education programs is a difficult task and that they face many different obstacles. They also offered solutions to eliminate these obstacles.

Ślusarczyk and Kot (2011) aimed to emphasize the role of logistics education in the Polish employment market and the preparation of engineers for the current labour market. In this context, they conducted a questionnaire with employers and as a result, they predicted that a good logistics education will increase logistics activities in the researched region and have a significant impact on the reduction of unemployment.

Munkácsi and Kazai-Ónodi (2018) conducted their study to investigate the perceptions of Generation X and Generation Y students studying in the field of logistics regarding collaborative learning. The researchers conducted the study on students studying at a logistics university in Budapest, a logistics assistant training course, and a logistics and transportation assistant course. As a result, they found that the students who participated in the study were aware of the importance of collaborative learning methods.

Cano and Ayala (2019) aimed to develop a teaching method in the field of logistics in order to help students studying in the field of business management to solve the problems they encounter in companies and to integrate the knowledge gained in logistics management courses. As a result, they found that the developed method contributed to students to better recognize the logistics system of the company they work for and to offer more effective solutions to problems in technical and economic terms.

Oyesiku, Somuyiwa and Oduwole (2020) conducted their study to examine the impact of logistics and transportation education trend in Nigeria on the country's economy. In this context, they used the classical regression analysis method to establish the relationship between 10-year period data. As a result of the study, they found that

businesses do not attach importance to certificates and qualifications in the field of logistics and transportation.

Świekatowski et al. (2018) conducted their study to analyse the logistics education system in Poland in comparison with the education system in Russia. In this context, they emphasized the importance of the certificates given for logistics sector employees and as a result, they emphasized the importance of the logistics school in Poznan in logistics education and that this education can be considered as a reference in Poland. They also concluded that Europe has a unique education system in terms of logistics education and that Russia is getting closer to European countries in terms of logistics education.

Çekerol (2020) conducted his study to obtain the opinions of senior managers of enterprises about the educational competencies of individuals graduating from logistics education programs. In this context, he conducted interviews with 8 large-scale business managers. As a result, he found that senior managers were of the opinion that logistics graduates do not have sufficient command of mathematics, information technologies and operational research, which leads to a lack of analytical thinking skills. He also concluded that the communication skills of new graduates are also low.

Mikova, Mihova and Stefanov (2020) conducted their study to examine the interaction between business enterprises and universities providing logistics and supply chain education in Bulgaria. In this context, they analysed data collected from 26 manufacturing and trade enterprises. As a result of the study, they found that the majority of commercial enterprises use limited or no interaction channels with universities.

Küçüksolak (2006) conducted his study to examine the programs providing logistics and supply chain education in the world and to make recommendations by evaluating the current situation of logistics and supply chain education in Turkey. As a result, he made various determinations and suggestions and recommended that the programs should be constantly updated and made flexible due to the dynamic structure of logistics and supply chain.

Hocaoğlu, Güner and Coşkun (2015) conducted their study in order to determine the responsiveness of higher education institutions providing logistics education in Turkey to the expectations of the logistics sector and the expectations of the sector from logistics education. Within the scope of the study, they conducted interviews with the officials of 8 logistics companies and as a result, they determined that the cooperation between the

logistics sector and higher education institutions is weak and that logistics education does not provide an advantage over other department graduates in recruitment.

Akandere (2016) conducted his study to evaluate the importance of vocational schools for the logistics sector and the attitudes of logistics students towards education, the sector and work. In this context, he made an application on 175 associate degree students studying at Konya Selçuk University. As a result, it was determined that the attitudes of logistics students towards work, industry and education were positive.

Çetinkaya (2014) conducted his study in order to provide information about the current situation of logistics education programs in Turkey, to evaluate the problems faced by logistics education and to offer solutions. In this context, he applied a questionnaire study to students who graduated from logistics programs and made inferences about why they preferred the logistics program, their level of satisfaction with the logistics education they received and the professions they currently work in. As a result, it has made recommendations by determining the situation regarding logistics education.

4. Methodology

The study was conducted to evaluate the level of knowledge of vocational school students about the types of transportation. Within the scope of the study, a questionnaire form consisting of 24 questions was prepared. The first part of the questionnaire form consists of demographic information such as gender, class, type of high school graduated from and internship status of the students as well as 5 questions prepared to determine whether they have knowledge about transportation types. The second part of the questionnaire consists of 9 questions to evaluate students' knowledge about the basic characteristics of transportation types and the advantages of transportation types over each other. The third and last section consists of 10 questions asking basic information about multimodal transportation types as well as some basic concepts. The population of the study consists of first and second grade logistics program students studying at a vocational school affiliated to a public university in the Western Mediterranean Region in the 2022-2023 academic years. In order to obtain healthy and reliable data for the questionnaire, students were personally visited at school and informed about the importance of the study. Afterwards, the questionnaire forms prepared online were delivered to all students through

class representatives. At the end of the study, 83 students answered the questionnaires, but these questionnaires were excluded from the study because 3 students gave the same answer to all questions. Frequency analyses of the data obtained from the 80 questionnaires accepted as valid in the study were made with IBM SPSS 16.0 program and comparison analyses were made with Microsoft Excel PivotTable program.

While analysing the questionnaire study, the sum of the answers given by the students to 9 questions in the second part of the questionnaire form was evaluated as transportation types, and the sum of the answers given to 10 questions in the third part was evaluated as multimodal transportation. The analysis of the data obtained within the scope of the study is presented in the application section.

5. Results

The following information was obtained as a result of analysing the data obtained within the scope of the study. In the first part of the questionnaire form used within the scope of the study, students were asked about their gender, grade, type of high school they graduated from and their internship status, and according to the results obtained, the demographic characteristics of the students are shown in Table 1.

Table 1. Demographic Characteristics of the Students Participating in the Study

Gender	Frequency (n)	Percentage (%)
Man	47	58,7
Woman	33	41,3
Total	80	100
Grade		
1st Grade	49	61,2
2nd Grade	31	38,8
Total	80	100
Type of High School Graduated from		
Anatolian High School	29	36,2
General High School	4	5,0
Imam Hatip High School	7	8,8
Vocational High School	40	50
Total	80	100
Internship Status		

I did it	18	22,5
I did not	62	77,5
Total	80	100

According to Table 1, 58.7% of the students participating in the study were male students, while the rate of female students was 41.3%. When the classes in which the students were studying were analysed, it was seen that the 1st grade students participated in the study more than the 2nd grade students with 49 participants and a rate of 61.2% compared to the 2nd grade students with a rate of 38.8%. It was determined that the logistics program students participating in the study graduated from 4 different types of high schools and 50% of the participants graduated from vocational high schools, 36.2% from Anatolian high schools, 8.8% from imam hatip high schools and 5% from general high schools. In addition, it was seen that only 22.5% of the students participating in the study have done an internship, while the remaining 77.5% have not yet done their internship.

Within the scope of this study, which was conducted to evaluate the level of knowledge of vocational school students about the types of transportation, in the first part of the questionnaire form, in addition to demographic characteristics, students were asked whether they had information about the types of transportation and the distribution of the answers received is shown in Table 2.

Table 2. I have information about types of transportation.

Answers	Frequency (n)	Percentage (%)
No	4	5,0
Undecided	22	27,5
Yes	54	67,5
Total	80	100,0

According to Table 2, 5% of the students stated that they did not have information about the types of transportation, while 27.5% were undecided and 67.5% stated that they had information about the types of transportation.

Table 3 shows the distribution of respondents' answers to the questions asked about basic transportation and multimodal transportation types in the second and third parts of the questionnaire according to their gender.

Table 3. Distribution of Participants' Responses According to Gender

Basic Transportation Types								
Gender	Wrong		Undecided		Correct		Total	
	n	%	n	%	n	%	n	%
Man	68	16	58	14	297	70	423	100
Woman	47	16	43	14	207	70	297	100
Types of Multimodal Transportation								
Gender	Wrong		Undecided		Correct		Total	
	n	%	n	%	n	%	n	%
Man	69	15	177	38	224	48	470	100
Woman	51	15	101	31	178	54	330	100

When Table 3 is examined carefully, it is seen that the answers given by male and female respondents to the questions asked about the basic types of transportation are at the same rates. Both males and females gave 70% correct and 16% incorrect answers to these questions, while 14% of the respondents were undecided. When the answers given by the participants to the questions asked about the types of multimodal transportation were analysed, it was found that 15% of both men and women gave incorrect answers, while the rate of those who said they were undecided was 38% for men and 31% for women. The rate of correct answers about multimodal transportation types was 48% for men and 54% for women.

Table 4 shows the distribution of the answers given by the students participating in the questionnaire to the questions about basic transportation and multimodal transportation types according to the classes they study.

Table 4. Distribution of Participants' Responses According to the Classes They Attended

Basic Transportation Types								
Grade	Wrong		Undecided		Correct		Total	
	n	%	n	%	n	%	n	%
1st Grade	74	17	73	17	294	67	441	100
2nd Grade	41	15	28	10	210	75	279	100
Types of Multimodal Transportation								
Grade	Wrong		Undecided		Correct		Total	
	n	%	n	%	n	%	n	%
1st Grade	68	14	191	39	231	47	490	100
2nd Grade	52	17	87	28	171	55	310	100

When Table 4 is examined, 17% of the 1st graders and 15% of the 2nd graders gave incorrect answers to the questions about the basic types of transportation. While the rate of 1st graders who answered "undecided" to this question was 17%, this rate was 10% in 2nd

graders. 67% of the 1st graders and 75% of the 2nd graders gave correct answers to the questions about basic transportation types. To the questions asked about the types of multimodal transportation, 14% of the first graders gave wrong answers and this rate was 17% in the second grades. While 39% of the 1st graders and 28% of the 2nd graders who participated in the study answered the questions about the types of multimodal transportation as undecided, 47% of the 1st graders and 55% of the 2nd graders answered correctly.

Table 5 shows the distribution of participants' answers to the questions on basic transportation and multimodal transportation types according to the type of high school they graduated from.

Table 5. Distribution of Participants' Responses According to the Type of High School They Graduated from

Basic Transportation Types								
Type of High School Graduated from	Wrong		Undecided		Correct		Total	
	n	%	n	%	n	%	n	%
Anatolian High School	30	11	42	16	189	72	261	100
General High School	9	25	12	33	15	42	36	100
Imam Hatip High School	14	22	9	14	40	63	63	100
Vocational High School	62	17	38	11	260	72	360	100
Types of Multimodal Transportation								
Type of High School Graduated from	Wrong		Undecided		Correct		Total	
	n	%	n	%	n	%	n	%
Anatolian High School	49	17	93	32	148	51	290	100
General High School	6	15	22	55	12	30	40	100
Imam Hatip High School	6	9	36	51	28	40	70	100
Vocational High School	59	15	127	32	214	54	400	100

According to Table 5, 11% of Anatolian high school graduates, 17% of vocational high school graduates, 22% of imam hatip high school graduates and 25% of general high school graduates gave wrong answers to the questions about basic transportation types. 11% of vocational high school graduates, 14% of imam hatip high school graduates, 16% of Anatolian high school graduates and 33% of general high school graduates answered "undecided" to these questions. It was found that 72% of vocational high school and Anatolian high school graduates, 63% of imam hatip high school graduates and 42% of general high school graduates answered these questions correctly. When the answers given by the participants to the questions asked about the types of multimodal transportation according to the types of high schools they graduated from are examined, it is seen that 9%

of imam hatip high school graduates, 15% of general high school and vocational high school graduates and 17% of Anatolian high school graduates gave incorrect answers to these questions. 32% of Anatolian and vocational high school graduates, 51% of imam hatip high school graduates and 55% of general high school graduates answered "undecided" to these questions. 54% of vocational high school graduates, 51% of Anatolian high school graduates, 40% of imam hatip high school graduates and only 30% of general high school graduates answered the questions about multimodal transportation types correctly.

The distribution of the answers given by the students participating in the questionnaire to the questions about basic transportation and multimodal transportation types according to their internship status is shown in Table 6.

Table 6. Distribution of Participants' Responses According to Internship Status

Basic Transportation Types								
Internship Status	Wrong		Undecided		Correct		Total	
	n	%	n	%	n	%	n	%
I did not	88	16	83	15	387	69	558	100
I did it	27	17	18	11	117	72	162	100
Types of Multimodal Transportation								
Internship Status	Wrong		Undecided		Correct		Total	
	n	%	n	%	n	%	n	%
I did not	96	15	239	39	285	46	620	100
I did it	24	13	39	22	117	65	180	100

When Table 6 is examined, among the students who participated in the study, those who did not do an internship answered the questions about basic transportation types incorrectly by 16% and correctly by 69%, while 15% of the students answered undecided to this question. Among the students who did not do an internship, 15% of them answered incorrectly, 46% of them answered correctly and 39% of them were undecided about the questions asked about multimodal transportation types. Of the students who declared that they had completed their internship, 72% of them answered the questions about basic transportation types correctly, 17% answered incorrectly, while 11% were undecided. It was determined that 65% of the interns answered the questions on multimodal transportation correctly, 13% answered incorrectly and 22% were undecided.

In the first part of the questionnaire, the students participating in the study were asked whether they had information about the types of transportation. According to the

results obtained, the answers given by the students in the second and third parts of the questionnaire were analysed and shown in Table 7.

Table 7. Distribution of Participants' Responses According to Their Level of Knowledge

Basic Transportation Types								
Knowledge Status	Wrong		Undecided		Correct		Total	
	n	%	n	%	n	%	n	%
I have no Knowledge	6	17	4	11	26	72	36	100
Undecided	42	21	45	23	111	56	198	100
I have Knowledge	67	14	52	11	367	76	486	100
Types of Multimodal Transportation								
Knowledge Status	Wrong		Undecided		Correct		Total	
	n	%	n	%	n	%	n	%
I have no Knowledge	6	15	13	33	21	53	40	100
Undecided	30	14	107	49	83	38	220	100
I have Knowledge	84	16	158	29	298	55	540	100

According to Table 7, 17% of the respondents who stated that they did not have information about the types of transportation answered the question about the basic types of transportation incorrectly and 72% answered correctly. 11% of the participants stated that they were undecided on this question. While 15% of the respondents who stated that they did not have any knowledge gave incorrect answers to the questions on multimodal transportation, 53% gave correct answers and 33% were undecided on these questions.

Those who said they have knowledge gave 14% incorrect and 76% correct answers to the questions about basic transportation types and 11% were undecided. Those who responded that they have knowledge about multimodal transportation gave 16% incorrect and 55% correct answers to the questions about multimodal transportation, while 29% were undecided.

Participants who were undecided about their knowledge on transportation types gave 21% incorrect answers, 56% correct answers and 23% undecided answers to the questions about basic transportation types. In the questions on multimodal transportation, 49% were undecided, 38% gave correct answers and 14% gave incorrect answers.

6. Discussion

Within the scope of the study, a questionnaire was conducted to evaluate the level of knowledge of vocational school logistics program students about transportation activities, which is one of the most basic and important components of logistics activities. The students participating in the questionnaire were asked questions about basic transportation types and multimodal transportation types. The answers given to these questions were analysed comparatively according to the gender, class, type of high school graduated from, internship status and whether they have knowledge about transportation types. As a result of the study, it was determined that the majority of the participants were male students, while first grade students showed more interest in the study than second grade students. The majority of the students studying in the logistics program are graduates of vocational high school and Anatolian high school. In addition, the majority of the participants are students who have not done an internship and think that they have knowledge about transportation types. As a result of the comparisons, it was seen that there was no difference between the correct and incorrect answers given by male and female students about the basic transportation types and that most of the students had knowledge about the basic transportation types. However, it was determined that the majority of male students did not have sufficient knowledge about multimodal transportation types. While first and second grade students have sufficient knowledge about basic transportation types, first grade students do not have sufficient knowledge about multimodal transportation types. In addition, it was observed that second graders were more dominant in basic transportation and multimodal transportation types than first graders. On the basis of the high schools they graduated from, it was determined that Anatolian and vocational high school graduates had sufficient knowledge about basic transportation types, while general high school graduates did not have sufficient knowledge. Most of the students who graduated from general high schools and imam hatip high schools remained undecided in the questions about multimodal transportation types and it was seen that the knowledge of the graduates of these high schools about multimodal transportation types was quite insufficient. There was no significant difference between the correct and incorrect answers given to the questions about basic transportation types between the students who did internship and the students who did not do internship, and it was observed that both groups had sufficient knowledge about basic transportation types. However, it was determined that the students who did internship had a better command of multimodal transportation types compared to those who did not do

internship and those who did not do internship did not have sufficient knowledge about multimodal transportation types. While there was no significant difference between the correct and incorrect answers given to the questions on basic transportation and multimodal transportation between the students who thought that they had information about the types of transportation and the students who thought that they did not have information, it was seen that the knowledge of those who declared that they were undecided about the multimodal transportation types was insufficient. As a result of the study, it was determined that the students participating in the study generally had sufficient knowledge about basic transportation types, but their knowledge about multimodal transportation types was insufficient.

7. Conclusion

As a result, it is concluded that the courses on transportation types and methods in vocational schools are insufficient. Especially multimodal transportation courses, which are an indispensable part of international trade, should be added to the curriculum and the number of transportation courses should be increased. It is thought that this situation is important for the students of the logistics program to become qualified and to find a job in better conditions in the sector, as well as for the economic development of the country.

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